WTCI-232-P

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

SUB GRADE

PLUMBING

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RICHARD ROTH, ARCHITECT

SKILLING HELLE CHRISTIANSEN & ROBERTSON
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FORMERLY WORTHINGTON SKILLING HELLE & JACKSON

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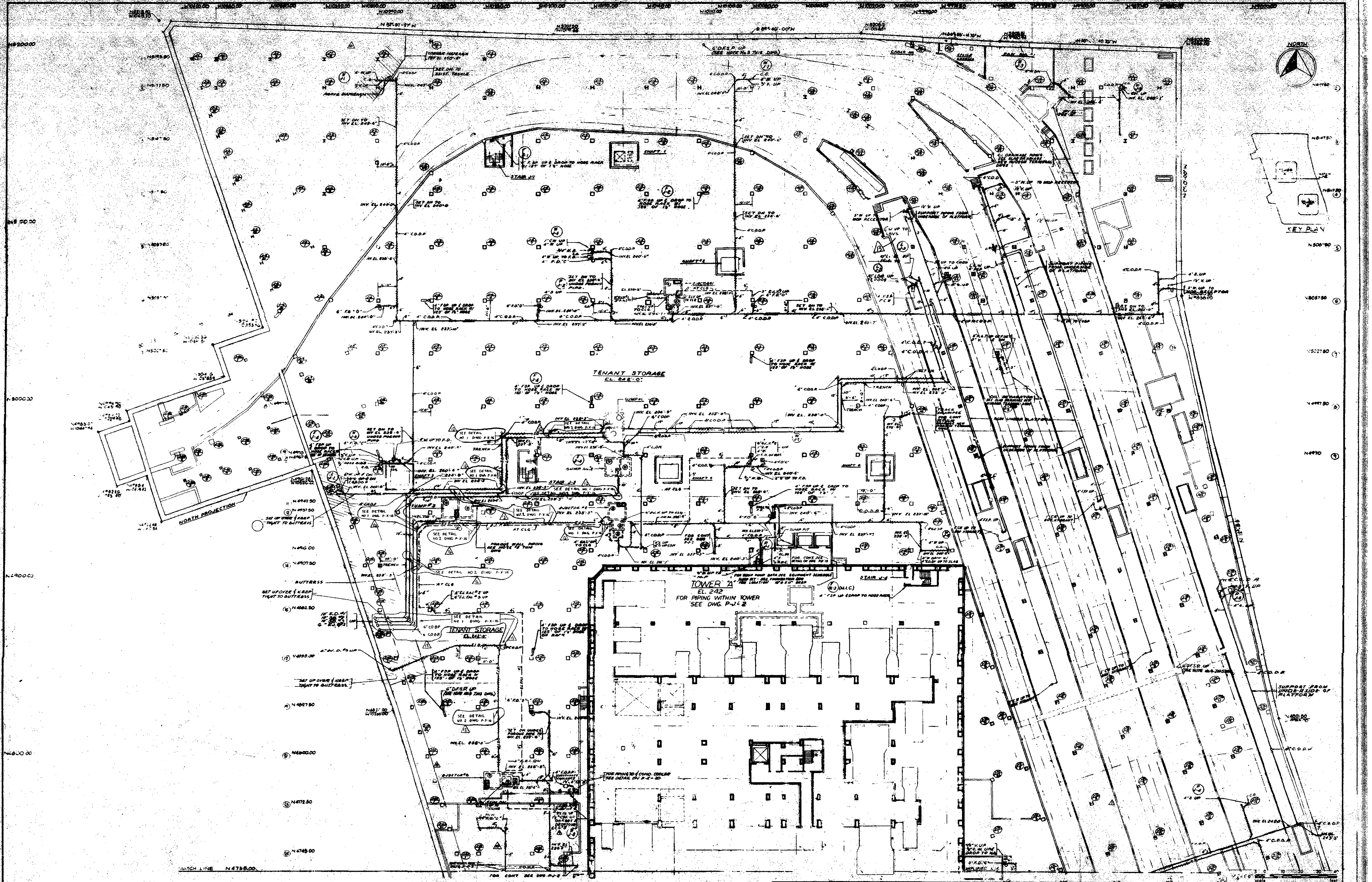

6. FOR TYPICAL TRENCHING DETAILS SEE DWG P-X-18

NOTES
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-21
2. FOR DIMENSIONS OF SUMPS & EJECTORS SEE DWG P-X-20
3. TEMPORARY 6" DRY STANDPIPE - PROVIDE FITTING 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.

7. THE DIMENSIONS FROM ℄ PIPE TO ℄ COLUMN ARE APPROXIMATE. FOR ACTUAL LOCATIONS OF PIPING WITHIN TRENCH REF. FOUNDATION DWGS. BY OTHERS.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	7-22-70	SG-99	SJC
				9	3-20-70	67	SJC
				8	3-20-70	SG-66	SJC
				7	12-19-6	SG-5	SJC
				6	[illegible]	SG-23	JC
				5	6-3-6	SG-15	JC
				4	[illegible]	SG-10	[illegible]
13	5-8-72	SG-141	[illegible]	3	[illegible]	SG-6	[illegible]
12	10-18-72	[illegible]	[illegible]	2			
11	9-22-71	SG-102	MA	1			

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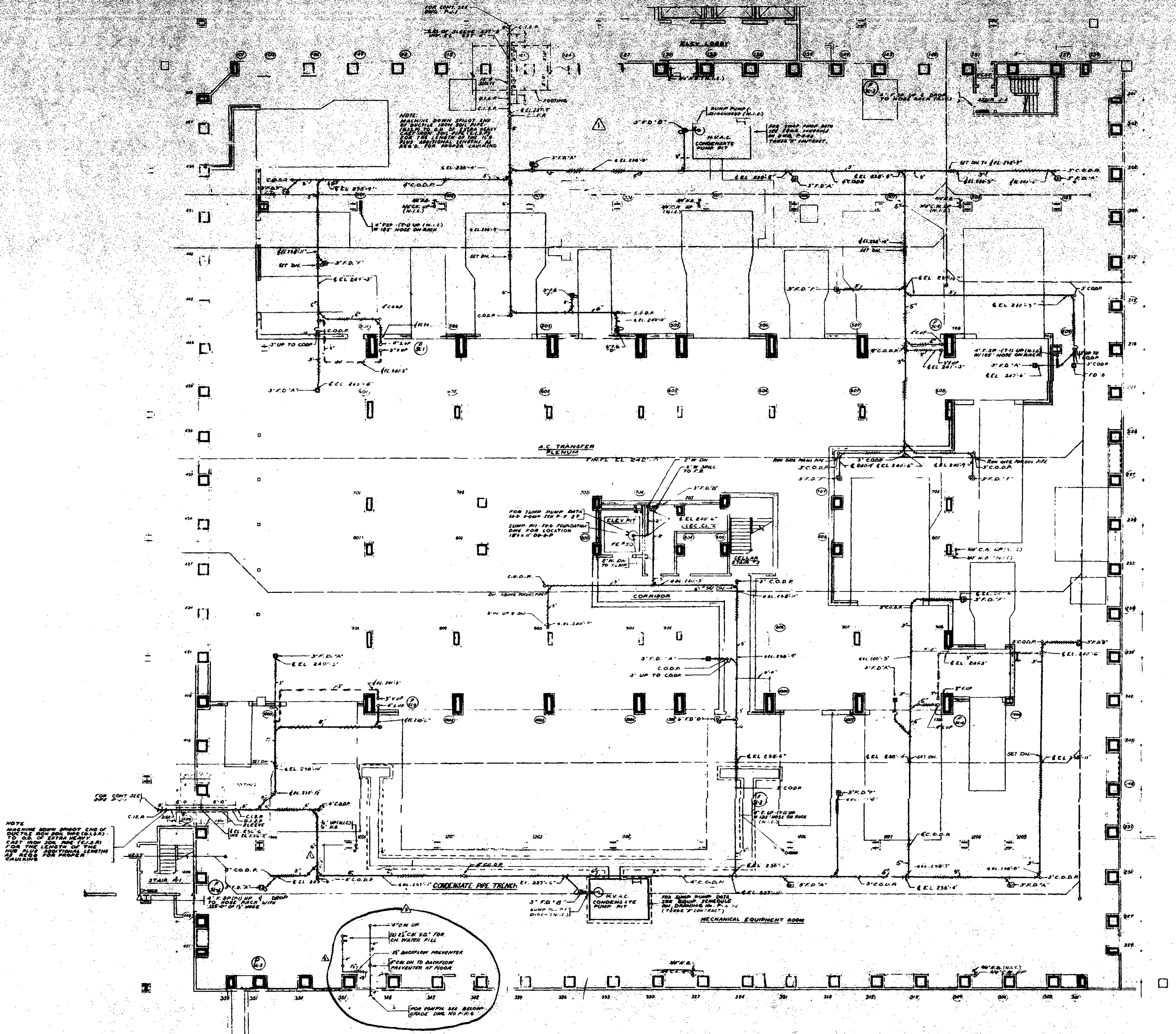
TITLE: SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 5-[EL. 242]

DRAWN	C.C.	CHECKED	F.I.S.
SCALE	1/16" = 1'-0"	DATE	5-16-66
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-1		



NOTES:
1. OR GENERAL NOTES AND SYMBOLS SEE DRAWING No. P.X. 27
2. ALL FLOOR DRAINS AND WASTE, SOIL AND VENT PIPING INDICATED ON THIS DRAWING AS UNDER THE ELEV. 242' SLAB WILL BE UNDER THIS CONTRACT. AND THE PIPING WILL TERMINATE WITH A HUB CONNECTION DIRECTLY ABOVE THE 242' SLAB. ALL OTHER PIPING IS UNDER ANOTHER CONTRACT (TOWER A)
3. THE DIMENSIONS INDICATED FROM ℄ PIPING TO ℄ COLUMN ARE APPROXIMATE. FOR ACTUAL LOCATIONS OF PIPING WITHIN TRENCH SEE FOUNDATION DWGS. BY OTHERS

CONTRACT BID DRAWING date

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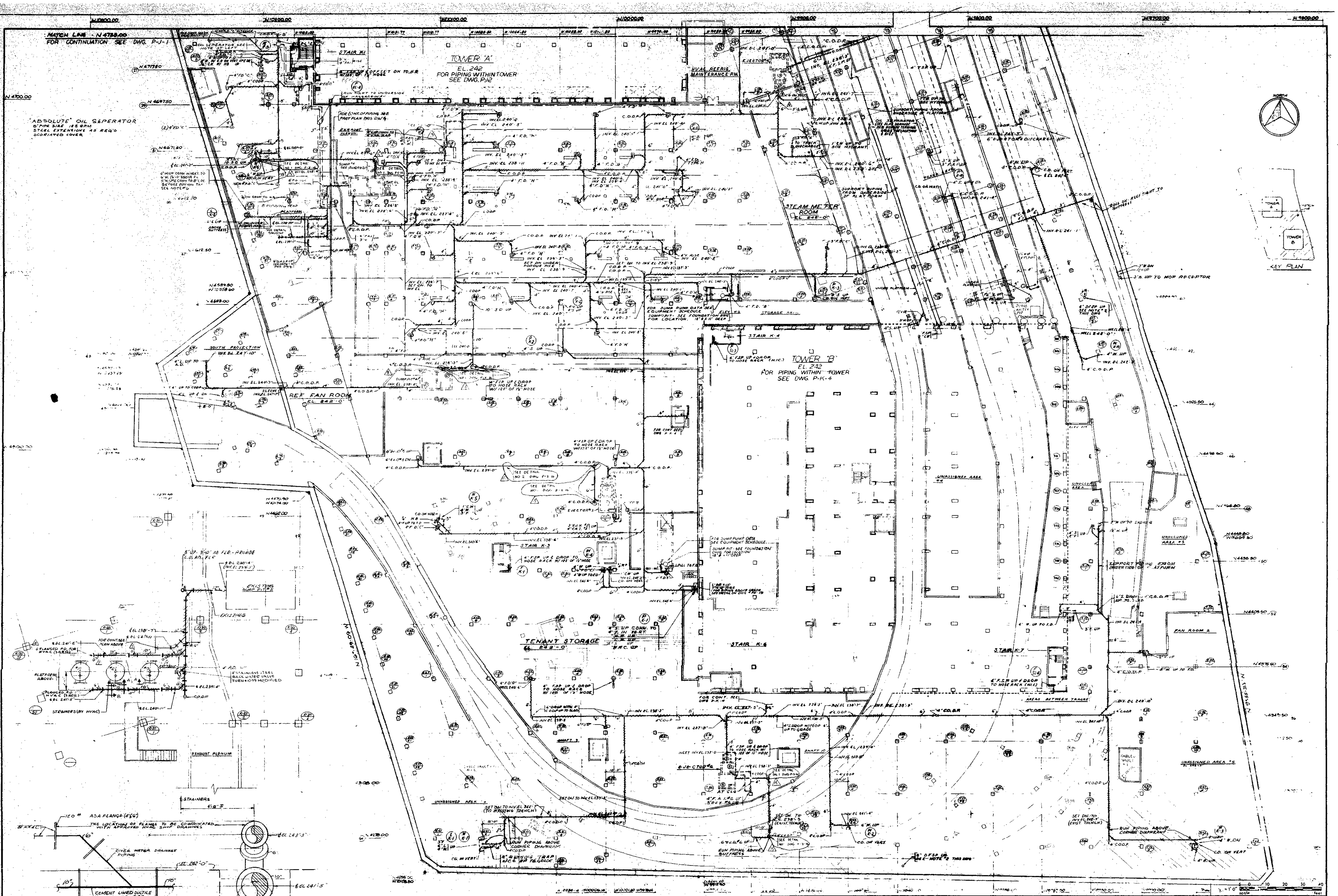
TITLE: SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 5 - EL. 242
TOWER "A"

DRAWN	G.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-66
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-2		

1/16" = 1'-0" scale 5 0 5 10 15 20 feet



NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. TEMPORARY DRY STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES. 5'-0" MIN. ABOVE FLOOR
3. FOR TYPICAL TRENCHING DETAILS SEE DWG. P-X-19
4. ~~FOR ELEV. SIZE & LOCATION OF SECTION~~ [illegible] TO SUMP [illegible] SEE DWGS P-X-30, P-X-31 & P-X-32
5. THE DIMENSIONS INDICATED FROM ℄ PIPING TO ℄ COLUMN ARE APPROXIMATE. FOR ACTUAL LOCATIONS OF PIPING WITHIN TRENCH SEE FOUNDATION DWGS. BY OTHERS
6. ALL PIPING FROM THE STRAINERS SHALL BE EPOXY COATED UP TO THE CONN. WITH 6" CDR.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	6-5-70	SG-85	P.T.
				9	3-20-70	SG-67	S.J.C.
				8	3-20-70	SG-33	J.Z.
				7	12-19-69	SG-16	S.J.C.
				6	12-19-69	SG-16	S.J.C.
15	10-13-72		RB	5	8-25-69	SG-23	J.C.
14	12-3-71	SG-165	BV	4	6-3-6[illegible]	SG-15	J.C.
13	4-9-71	SG-148	J.I.	3	3-19-69	SG-10	J.C.
12	10-28-70	SG-119	SJC	2	1-2[illegible]-69	SG-6	J.C.
11	7-22-70	SG-99	SJC	1	7-11-68	SG-2	J.C.

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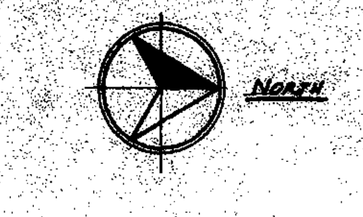
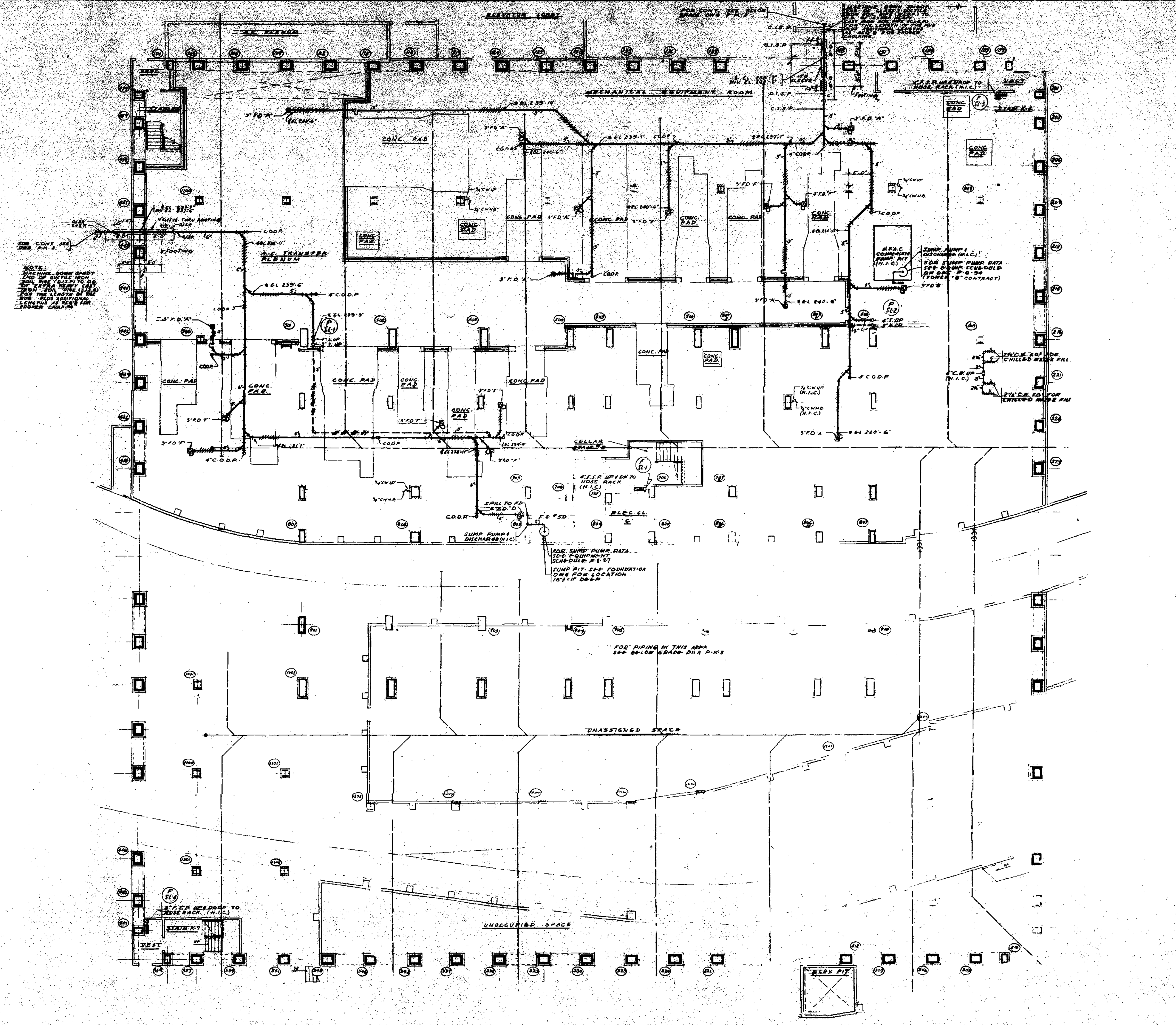
TITLE
SUB-GRADE PLAN-ZONE "K"
SUB-LEVEL 5-EL. [242]

DRAWN	G.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-K-3		





NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DRAWING No. P-K-27
2. FIRE STANDPIPE SHOWN ON THIS DWG. IS UNDER TOWER "B" PLUMBING CONTRACT.
3. ALL FLOOR DRAINS & WASTE, SOIL AND VENT PIPING INDICATED ON THIS DRAWING AS UNDER THE EL 242' SLAB WILL BE UNDER THIS CONTRACT. AND THE PIPING WILL TERMINATE WITH A HUB CONNECTION DIRECTLY ABOVE THE 242' SLAB. ALL OTHER PIPING IS UNDER ANOTHER CONTRACT (TOWER "B")
4. THE DIMENSIONS FROM ℄ PIPING TO ℄ COLUMN ARE APPROXIMATE. FOR ACTUAL LOCATIONS OF PIPING WITHIN TRENCH SEE FOUNDATION DWGS. BY OTHERS

1/8" = 1'-0"

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TITLE: SUB-GRADE PLAN-ZONE "K"
SUB-LEVEL 5 - FL [242]
TOWER "B"

DRAWN	G.C.	CHECKED	F.A.S.
SCALE	1/8"=1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-K-4		

NO.	DATE	DWG. NO.	BY	NO.	DATE	DWG. NO.	BY

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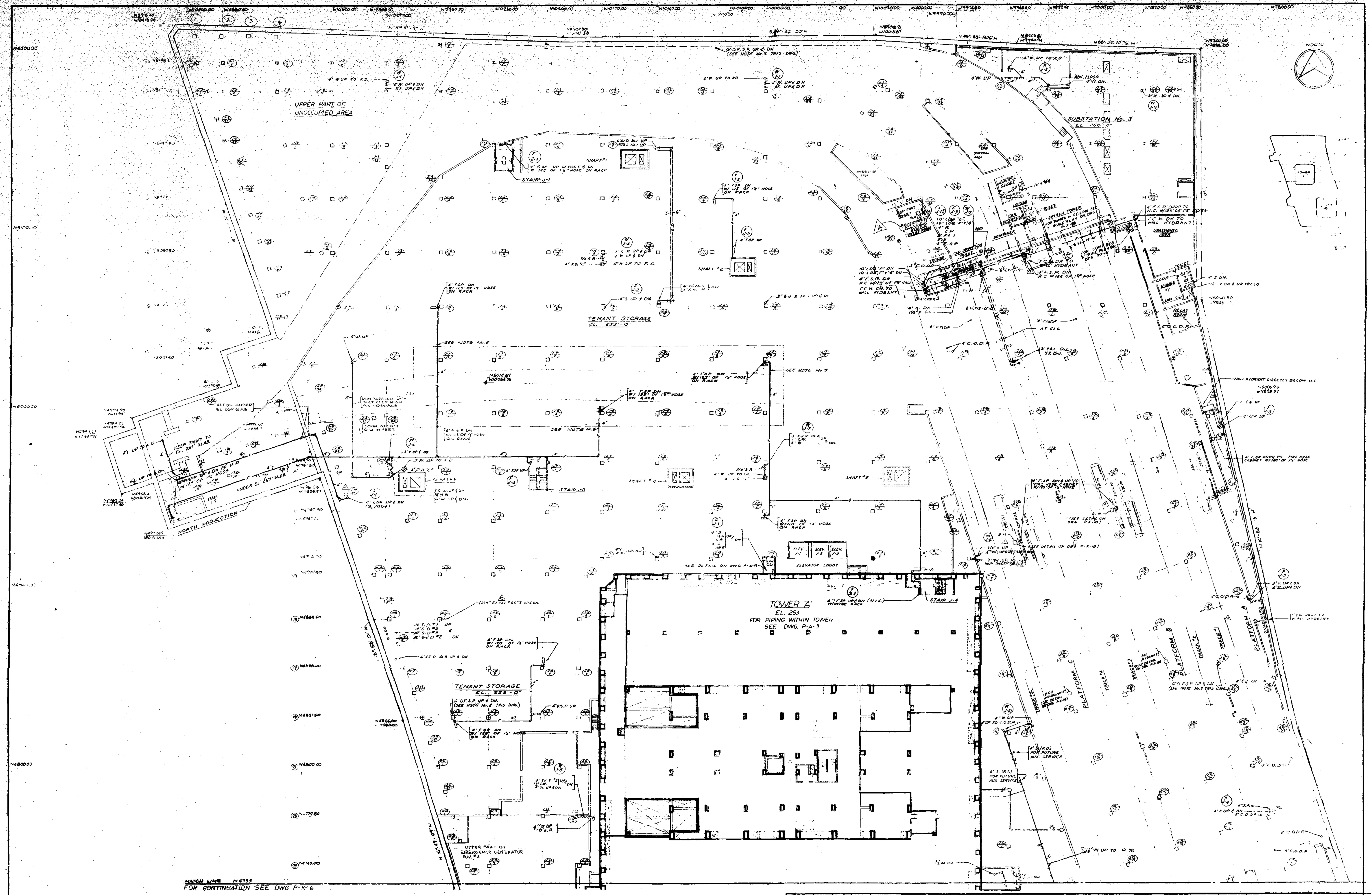

NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.
3. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DWG. No. P-X-16.
4. FOR ACTUAL LOCATION OF F.H. CABINETS & BOX HYDRANTS ON PLATFORM SEE ARCHITECTURAL DRAWINGS.
5. INSTALL PIPING AFTER REMOVAL OF EXISTING PATH TUBES.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	3-20-70	SG-60	M.S.
				9	3-20-70	SG-67	SJC.
				8	3-20-70	SG-66	SJC.
				7	12-19-67	SG-16	J.I.
				6	12-19-69	16	SJC.
				5	12-19-69	SG-5	SJC.
14	5-18-72	SG 191	RB	4	6-3-69	SG-15	J.C.
13	9-27-71	SG-182	HA	3	3-19-69	SG-10	BV.
12	7-12-71	SG-161	SJC	2	1-22-69	SG-6	L.U.
11	1-27-71	SG-120	GP	1	9-17-68	SG-2	JE

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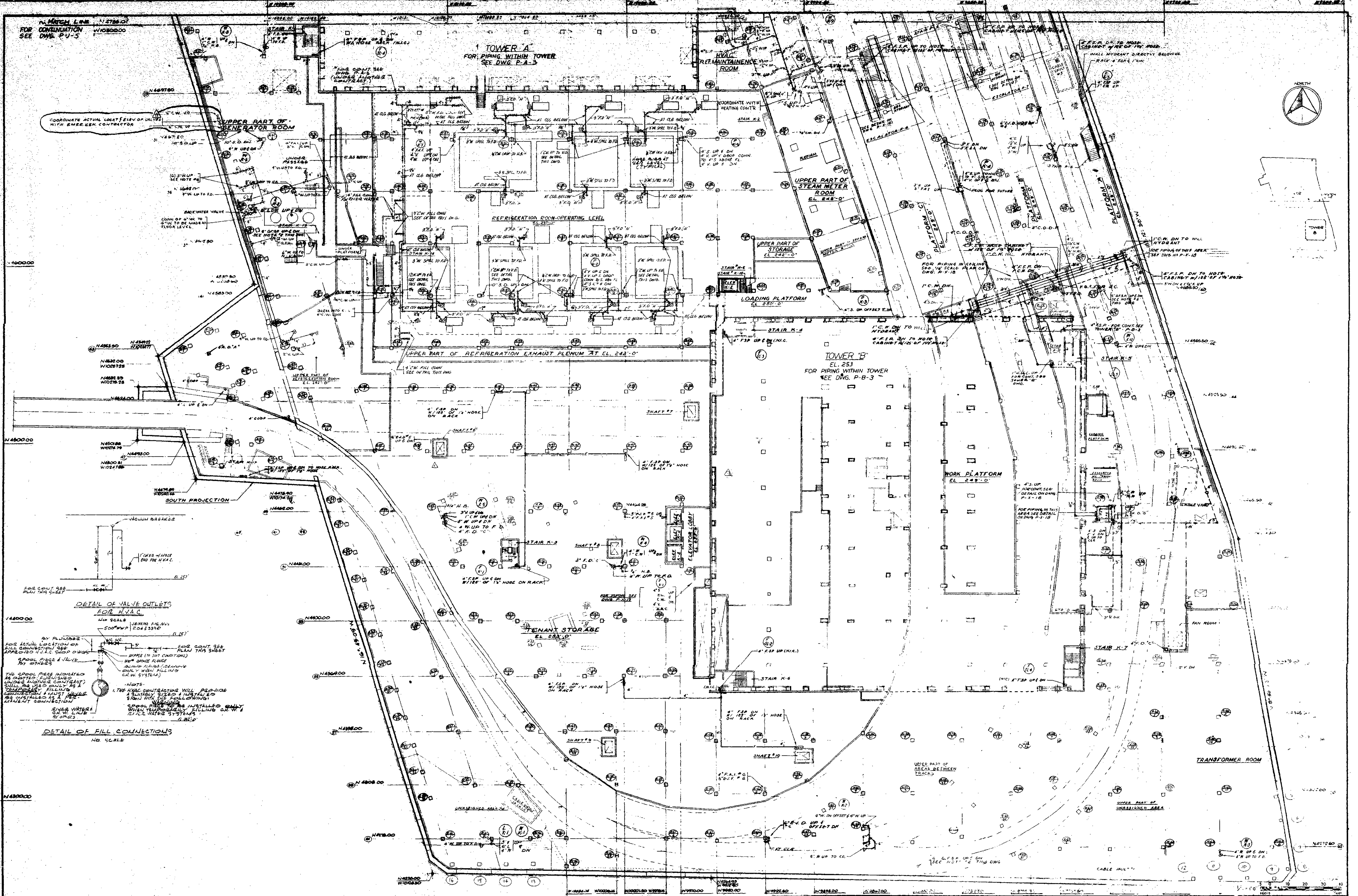
TITLE
SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 4-EL 253

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/32" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-5		



NOTES:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. TEMPORY 6" DRY STANDPIPE. PROVIDE (2) TWO 2½" HOSE VALVES. 5'-0" MIN. ABOVE FLOOR
3. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DWG. No. P-X-18.
4. FOR ACTUAL LOCATION OF F.H. CABINETS & BOX HYDRANTS ON PLATFORM SEE ARCHITECTURAL DRAWINGS.
5. 5" PRV IN REFRIGERATION ROOM AT OUTLET PRESSURE OF 75 PSI.
6. [illegible]

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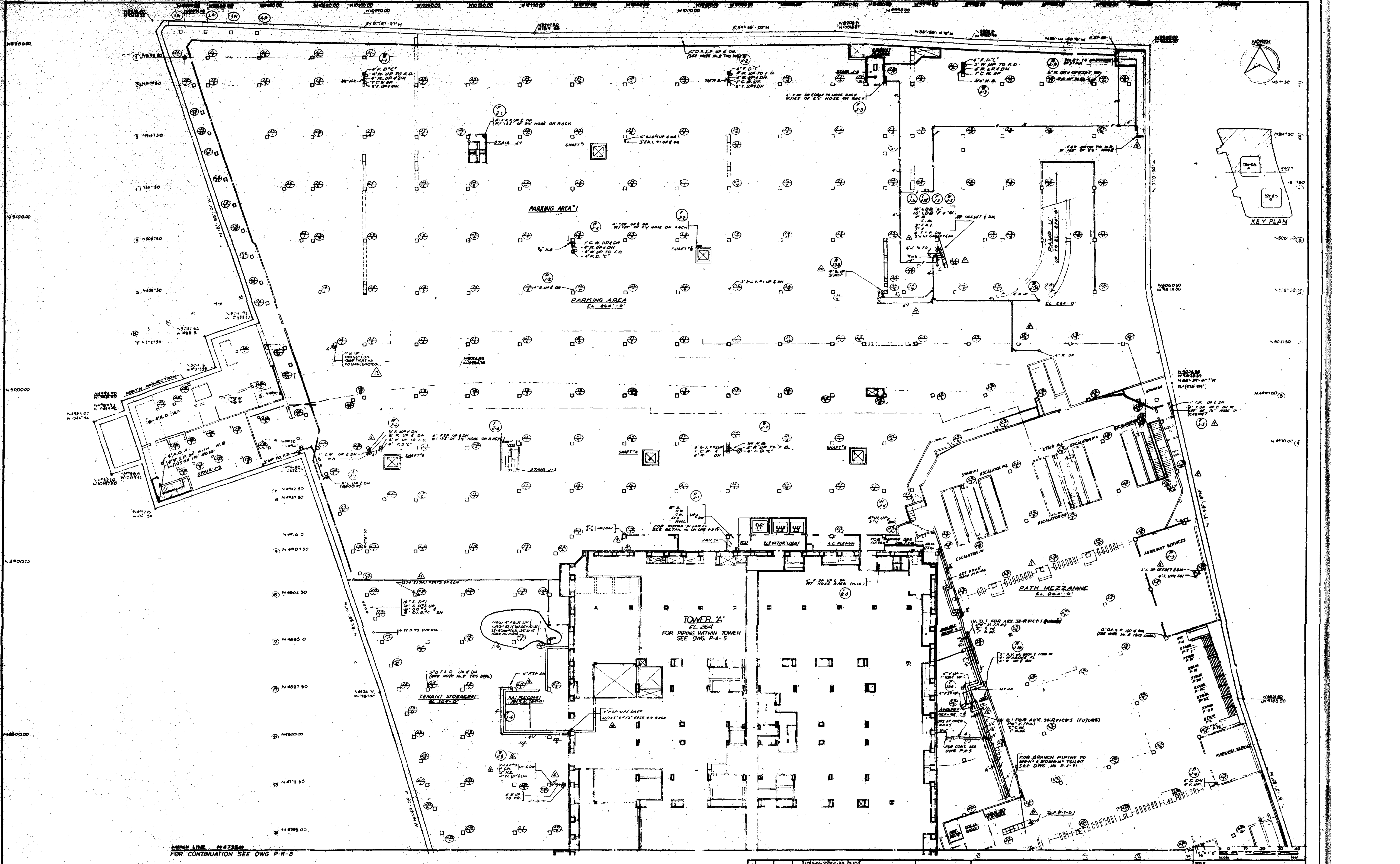
TITLE: SUB-GRADE PLAN-ZONE "K" SUB-LEVEL 4-EL [250'-253']

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-K-6		



NOTE

1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.
3. SUBSTITUTE FIRE HOSE CABINETS AS MANUFACTURED BY J. L. INDUSTRIES MODEL "ACADEMY 202X" WITH STAINLESS STEEL FRONTS IN PUBLIC AREAS AT PATH PLATFORM AND MEZZANINE LEVELS IN LIEU OF SPECIFIED FIRE HOSE CABINETS IN THESE AREAS

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	3-20-70	SG-33	SJG
				9	3-20-70	SG-66	SJC.
				8	12-19-69	SG-16	J.J.
				7	12-19-69	SG-16	SJC
				6	12-19-69	SG-5	SJC
				5	6-3-69	SG-15	J.C.
				4	3-19-69	SG-10	B.I.
13	11-7-74	SG-23[illegible]	J.I.	3	1-27-69	SG-6	F.U.
12	7-12-71	SG-161	SJC	2	9-1-68	SG-2	J.E.
11	3-20-70	SG-60	M.S.	1	7-10-69		J.C.

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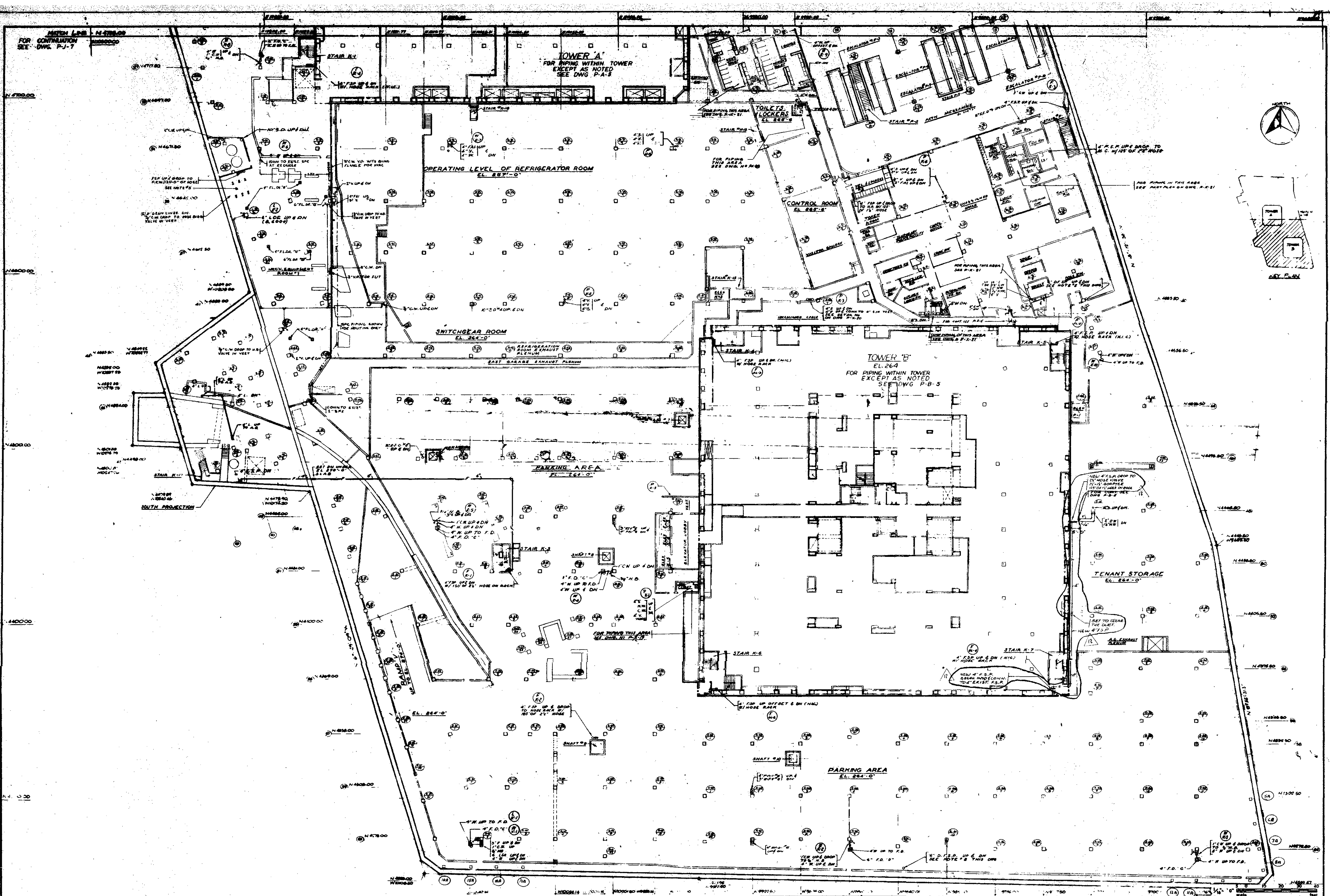
TITLE
SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 3-EL 264

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-7		



NOTES:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-27
2. TEMPORARY 6" DRY STANDPIPE: PROVIDE (2) TWO 2½" HOSE VALVES 5'-0" MIN. ABOVE FLOOR
3. INSTALL PIPING AFTER REMOVAL OF EXISTING PATH TUBES.
4. FOR PIPING TO TOILETS ON PLATFORM SEE DETAIL SHEET DRAWING No. P-X-18.
5. PIPING FROM THE STRAINERS SHALL BE EPOXY COATED.

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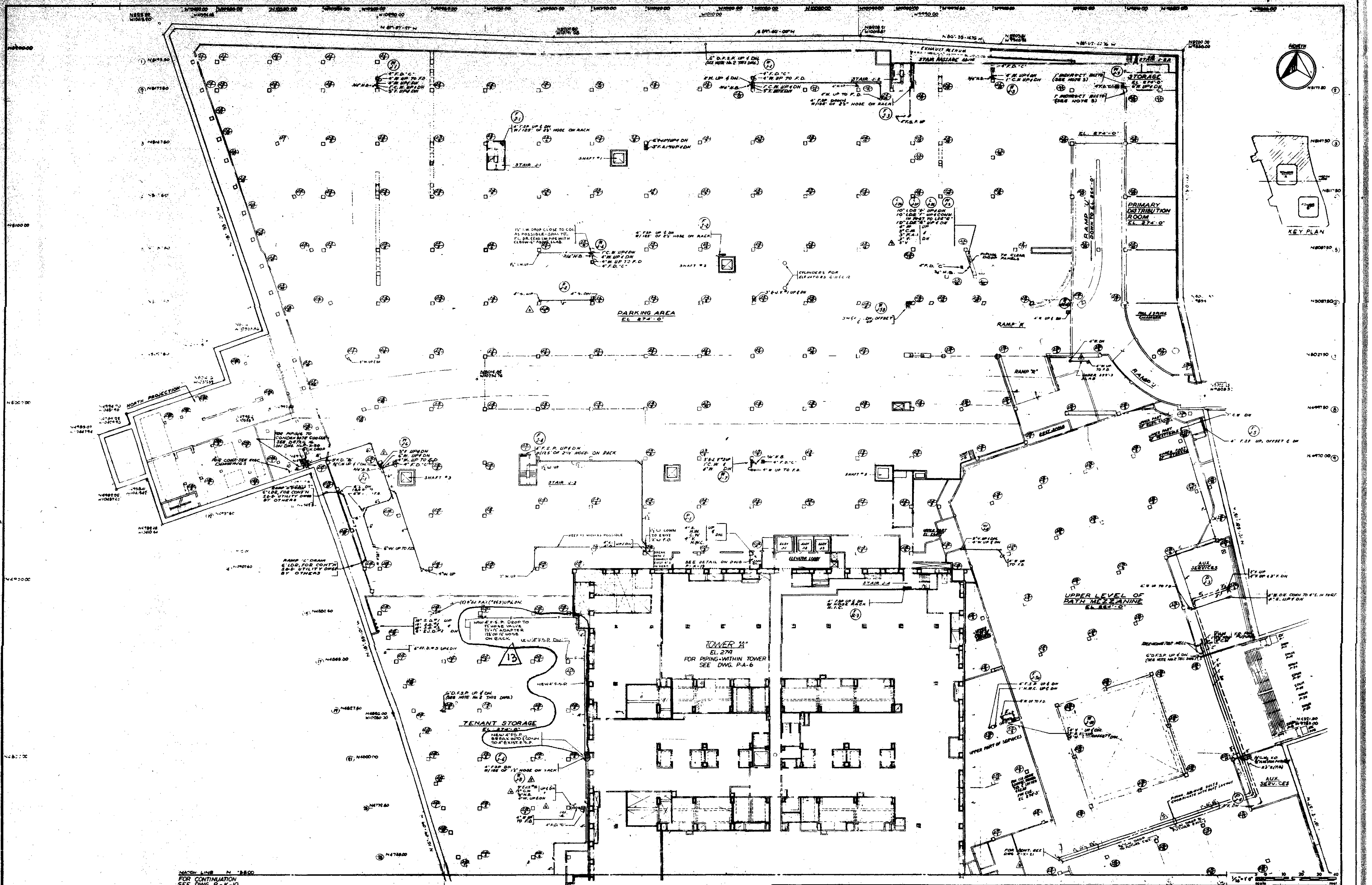
TITLE: SUB-GRADE PLAN-ZONE "K" SUB-LEVEL 3-EL 264

DRAWN	J.C.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
DRAWING NUMBER	P-K-8		



NOTE:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-K-27
2. TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES 5'-0" MAXIMUM ABOVE FLOOR.
3. CONTRACTOR TO PROVIDE & INSTALL COPPER PAN (FOR SIZE & LOCATION SEE ELECT. DRAWINGS) PIPE 1" WASTE TO ELEV. 274 SLAB.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	3-11-70	SG-33	SJC
				9	9-19-70	SG-66	SJC
				8	12-19-69	SG-16	J.I.
				7	12-19-69	SG-16	SJC
				6	12-19-69	SG-5	SJC
				5	6-3-69	SG-15	J.C.
				A	3-19-69	SG-10	E.V.
13	11-7-74	SG-298	T.I.	3	1-?-69	SG-6	E.U.
12	1-16-73	SG-256	RB	2	9-?-68	SG-6	V.L.
11	7-12-71	SG-161	SJC	1	1-10-68		J.G.
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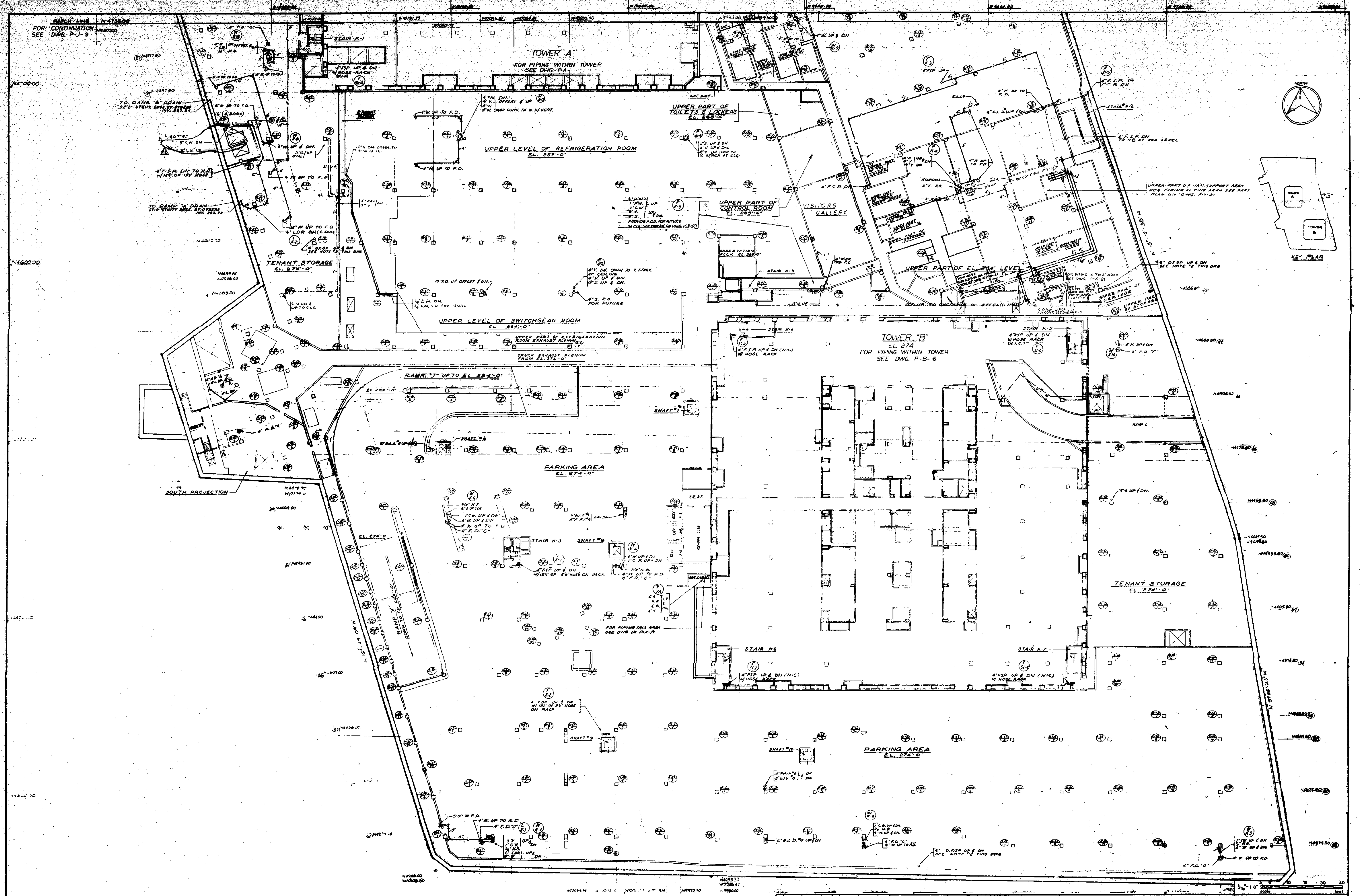
TITLE
SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 2 -EL [274]

DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-9		



NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-27
2. 8" TEMPORARY DRY STANPIPE. PROVIDE (2) TWO 2½" HOSE VALVES. 3'-0" MIN ABOVE FLOOR.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	10-6-71	SG-173	J.I.
				9	1-27-71	SG-118	S.J.C.
				8	7-22-70	SG-99	S.J.C.
				7	3-17-70	SG-51	J.I.
				6	3-20-70	SG-30	S.J.C.
				5	3-20-70	SG-33	J.I.
				4	12-19-69	SG-16	S.J.C.
				3	3-19-69	SG-12	J.C.
12	1-18-72	SG 195	R.B.	2	1-20-69	SG-6	J.C.
11	12-3-71	SG-165	B.V.	1	9-1768	SG-2	J.E.

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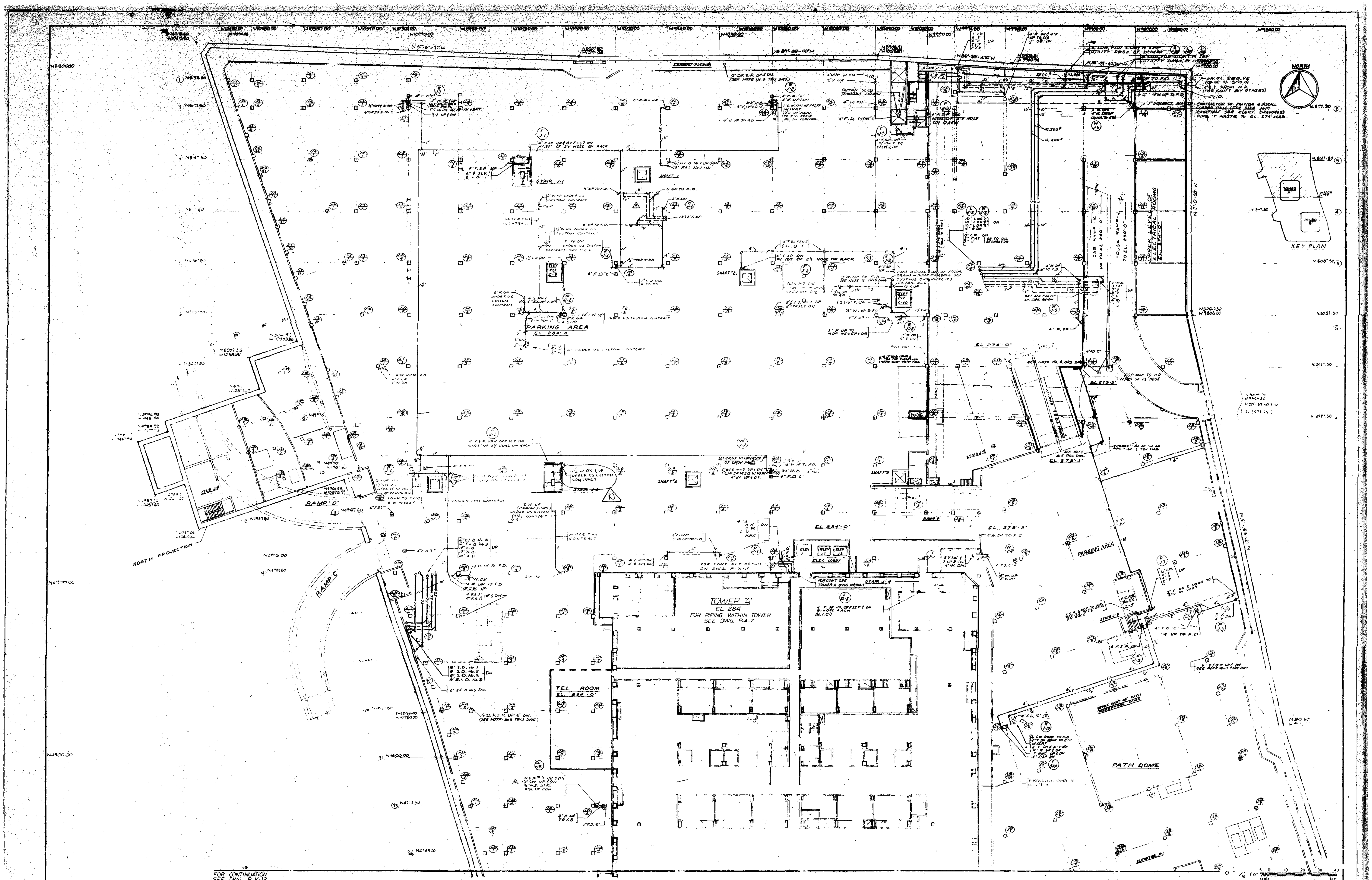
TITLE: SUB-GRADE PLAN-ZONE 'K'
SUB-LEVEL 2-EL. 274

SCALE: 1/16" = 1'-0"

DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	
DRAWING NUMBER	P-K-10		



NOTE.

1 FOR GENERAL NOTES & SYMBOLS SEE DWG. PX-27

2. [illegible] LOCATIONS OF PENETRATIONS THRU [illegible] SEE P-J-13 & P-C-2, 3, 4 & 5 ([illegible] CONTRACT)

3 TEMPORARY 6" DRY STANDPIPE - PROVIDE (2) TWO 2½" HOSE VALVES 5'-0" MINIMUM ABOVE FLOOR.

4. INSTALL PIPING AFTER REMOVAL OF EXISTING PATH TUBES

NO.	DATE	BUL. NO.	BY
10	1-13-73	SG-256	RB
9	7-12-71	SG-161	SJC
8	3-19-70	SG-66	SJC
7	12-19-69	SG-16	SJC
6	12-19-69	SG-5	SJC
5	12-19-69	SG-35	J.C.
4	3-19-69	SG-10	B.V.
3	1-20-69	SG-6	K.W.
2	9-17-68	SG-2	A.F.
1	7-10-68		J.C.

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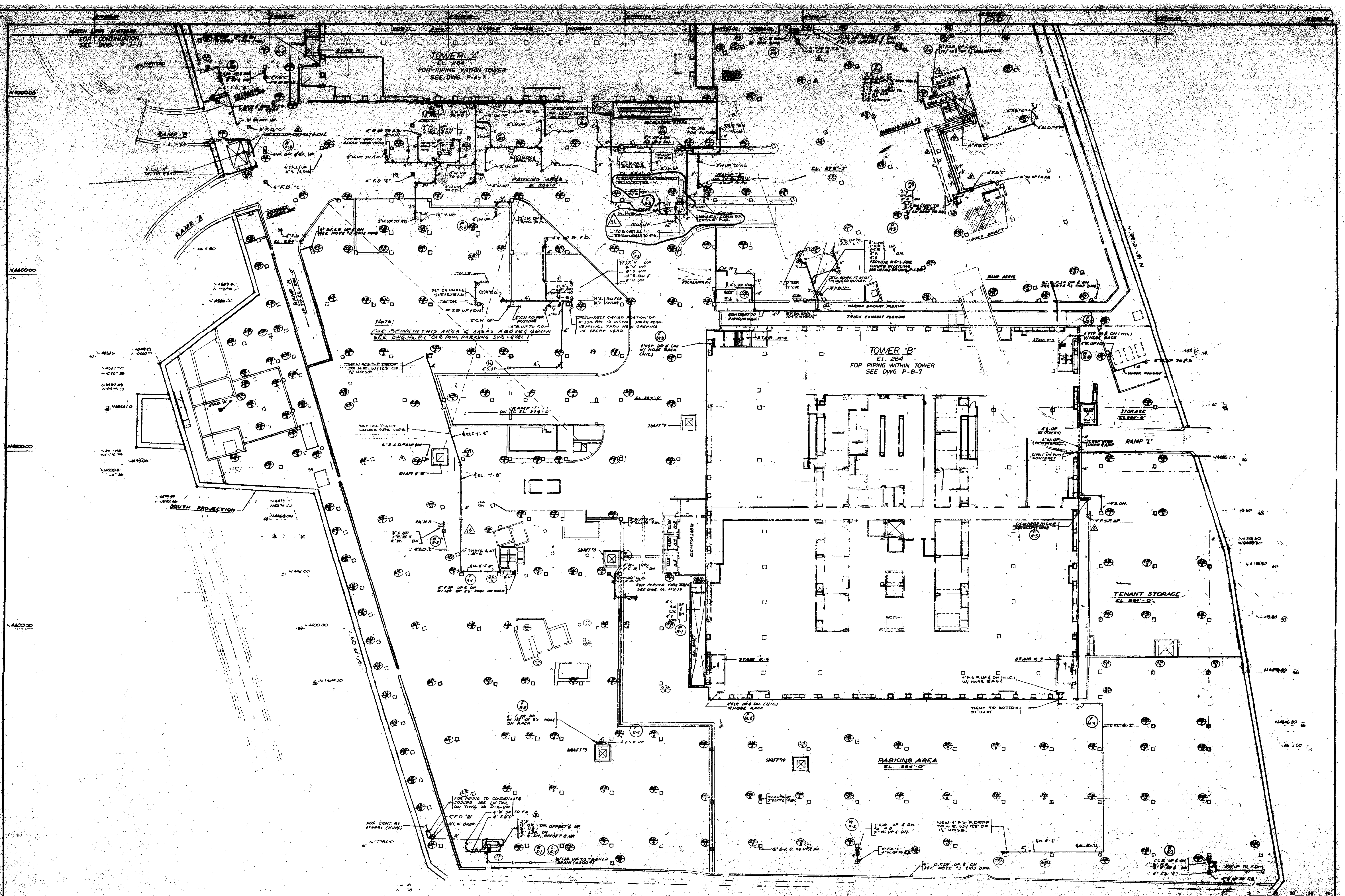
TITLE: SUB-GRADE PLAN-ZONE "J"
SUB-LEVEL 1-EL. 279-284

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-1[illegible]
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-11		



NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. P-X-27.
2. PIPING SHOWN DOUBLE LINED IS TENTATIVE CONTRACTOR SHALL NOT INSTALL UNTIL AUTHORIZED BY THE ENG. / AUTHORITY.
3. TEMPORARY 6" DRY STANDPIPE PROVIDE (1) TWO 2½" HOSE VALVES 5'-0" MIN. ABOVE FLOOR.

BULLETINS NOT NUMBERED ARE IN PROGRESS

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				20	1-11-74	SG-280	SJC	10	2-17-71	SG-130	T.T.
				19	7-18-72	SG 223	SJC	9	7-22-70	SG-99	SJC
				18	6-19-72	SG 205	T.T.	8	3-11-70	SG-51	T.T.
				17	5-18-72	SG 188	RB	7	3-20-70	SG-50	SJC
				16	5-18-72	SG 208	RB	6	12-19-69	SG-25	T.T.
				15	5-18-72	SG 207	RB	5	12-19-69	SG-16	SJC
				14	1-18-72	SG-195	RB	4	3-11-69	SG-10	J.C.
				13	10-6-71	SG-173	T.T.	3	[illegible]	SG-6	[illegible]
				12	8-27-71	SG-168	H.A.	2	[illegible]	SG-2	[illegible]
21	4-16-74	SG-290	T.T.	11	8-17-71	SG 141	LM	1	7-10-69		J.E.
REVISIONS				REVISIONS				REVISIONS			

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CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, HELLE & JACKSON
STRUCTURAL ENGINEERS

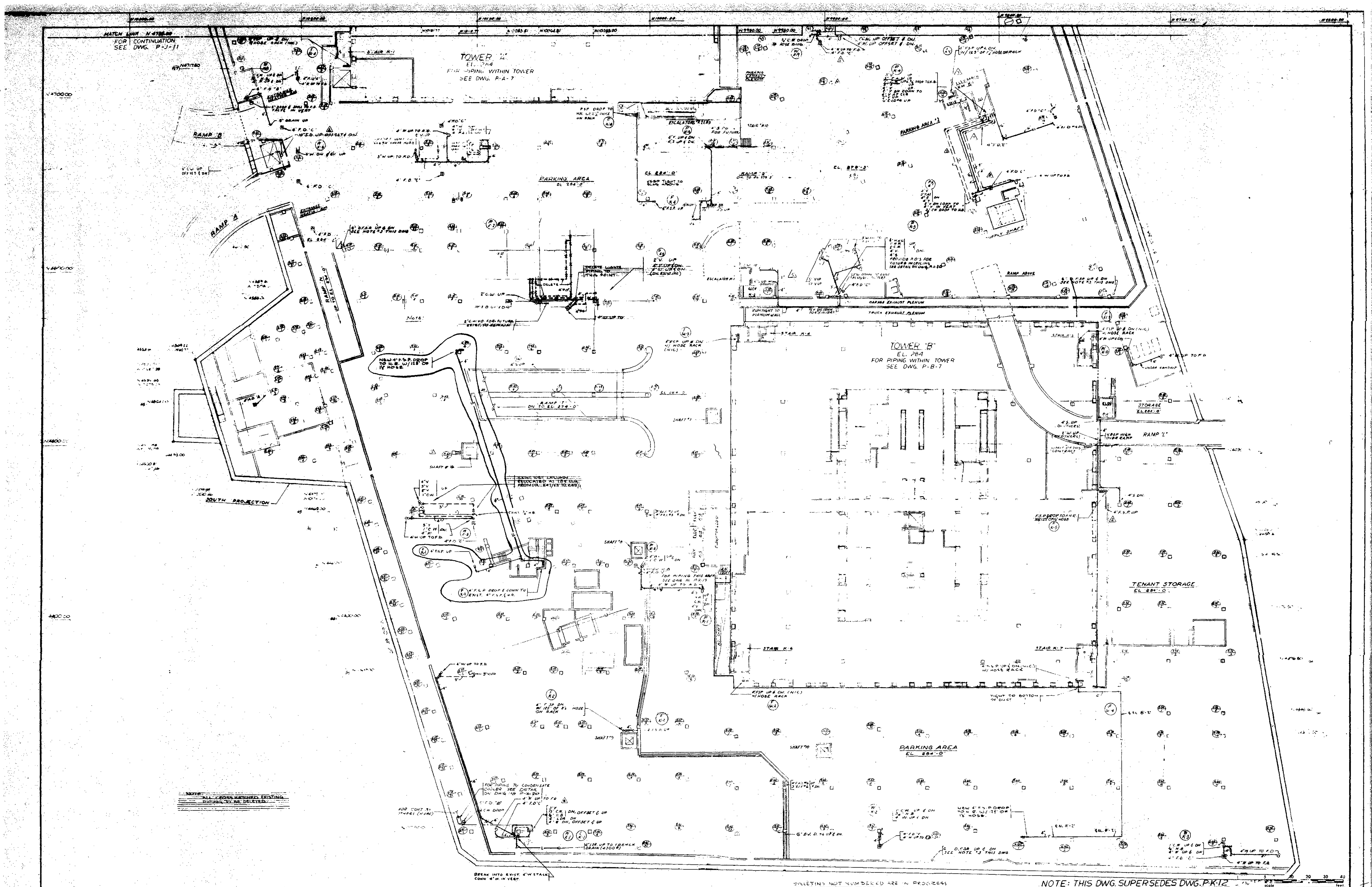
JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE
SUB-GRADE PLAN-ZONE "K"
SUB-LEVEL 1-EL. [279'-3" 284']

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
DRAWING NUMBER	P-K-12		



BULLETINS NOT NUMBERED ARE IN PROGRESS

NOTE: THIS DWG. SUPERSEDES DWG. P-K-12

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				22	9-22-75	56-	SJC
				21	4-16-74	56-290	J.I.
REVISIONS				REVISIONS			

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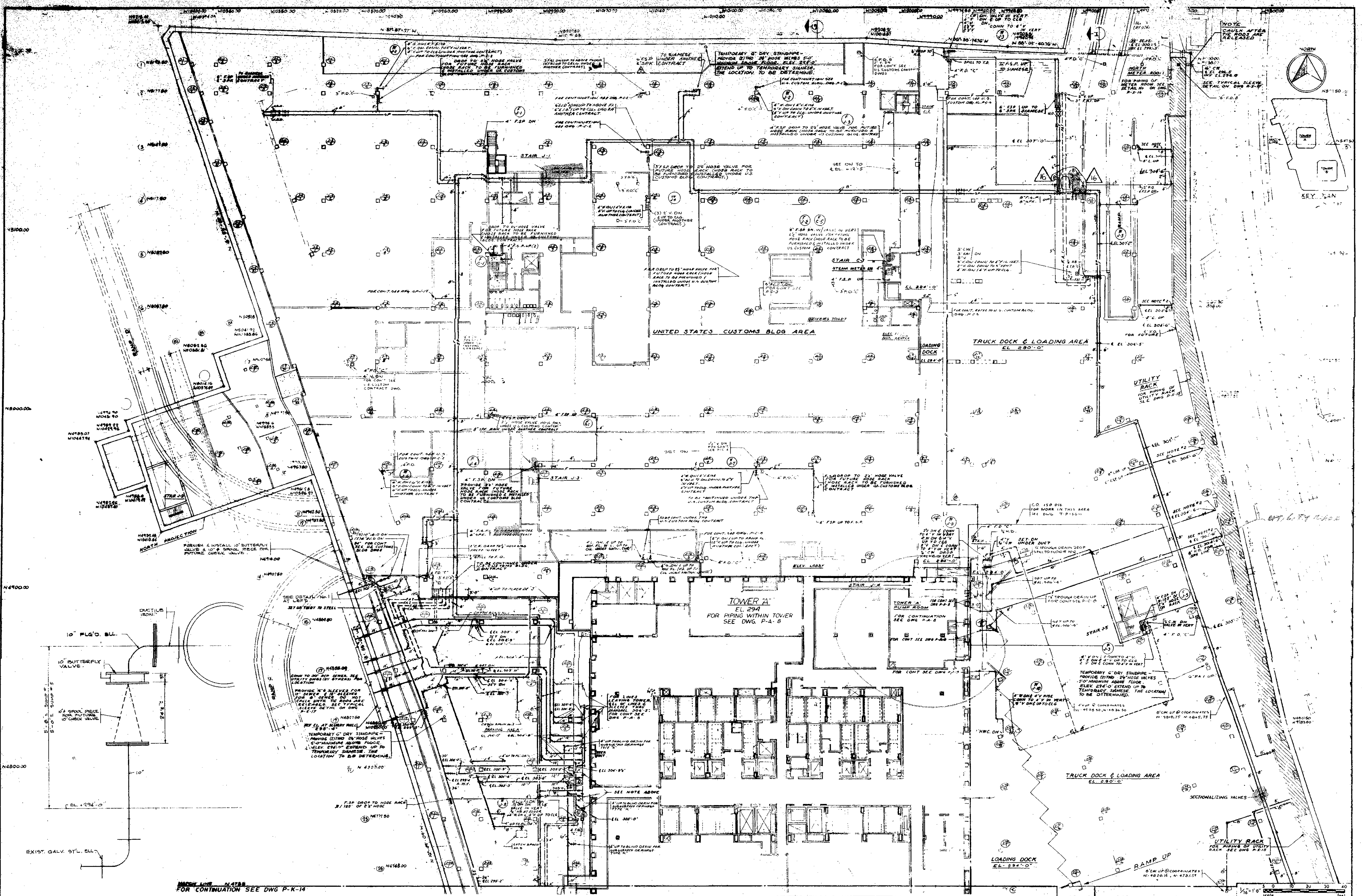
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB-GRADE PLAN-ZONE "K"
SUB-LEVEL 1-EL. 279-3'-284

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER	WTC 531.00	SHEET	OF
DRAWING NUMBER	P-K-12-II		



DETAIL No. 1
NO SCALE

NOTES:

1. FOR GENERAL NOTES AND SYMBOLS SEE DRAWING No P-X-27
2. FOR CONT OF PIPING AT UTILITY RACK SEE '8' SCALE PLAN OF UTILITY RACK DWG P-X-15
3. ALL LINES INDICATED GOING UP SHALL TERMINATE THROUGH THE 310' SLAB W/ APPROPRIATE FITTINGS. (FOR CONTINUATION UNDER ANOTHER CONTRACT UNLESS OTHERWISE NOTED
4. FOR ACTUAL LOCATIONS OF ALL FLOOR DRAINS SEE U.S. CUSTOM BLDG. CONTRACT DWG'S. (P-C-2-3-4-5).
5. DRAINAGE PIPING TO BE SCHED. 40 GALVANIZED STEEL
6. THE 8" SPRINKLER MAIN INDICATED ON THIS PLAN WILL BE INSTALLED UNDER ANOTHER CONTRACT AND IS SHOWN SOLELY AS AN INDICATION OF THE FIRE & SPR. CROSS CONNECTING MAIN WITH THEIR SIAMESE CONNECTIONS. FOR FURTHER COORDINATION SEE SPRINKLER DWGS.

ALL BULL. NOT DATED ARE IN THE PROCESS OF COMPEATION.

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	7-12-71	SG-161	DC
				9	3-20-70	SG-66	SJC
				8	12-12-69	SG-36	T.J.
				7	12-16-69	SG-16	SJC
16	3-22-72	SG-262	RB	6	12-16-69	SG-5	SJC
15	2-18-72	SG-201	J.K.	5	10-10-69	SG-28	J.C.
14	11-23-71	SG-185	RB	4	3-19-69	SG-3	J.C.
13	12-2-71	SG-190	T.I.	3	1-	SG-6	E.W.
12	7-12-71	SG-163	SJC	2	7-17-68	SG-2	JE
11	7-12-71	SG-162	SJC	1	7-		
REVISIONS				REVISIONS			

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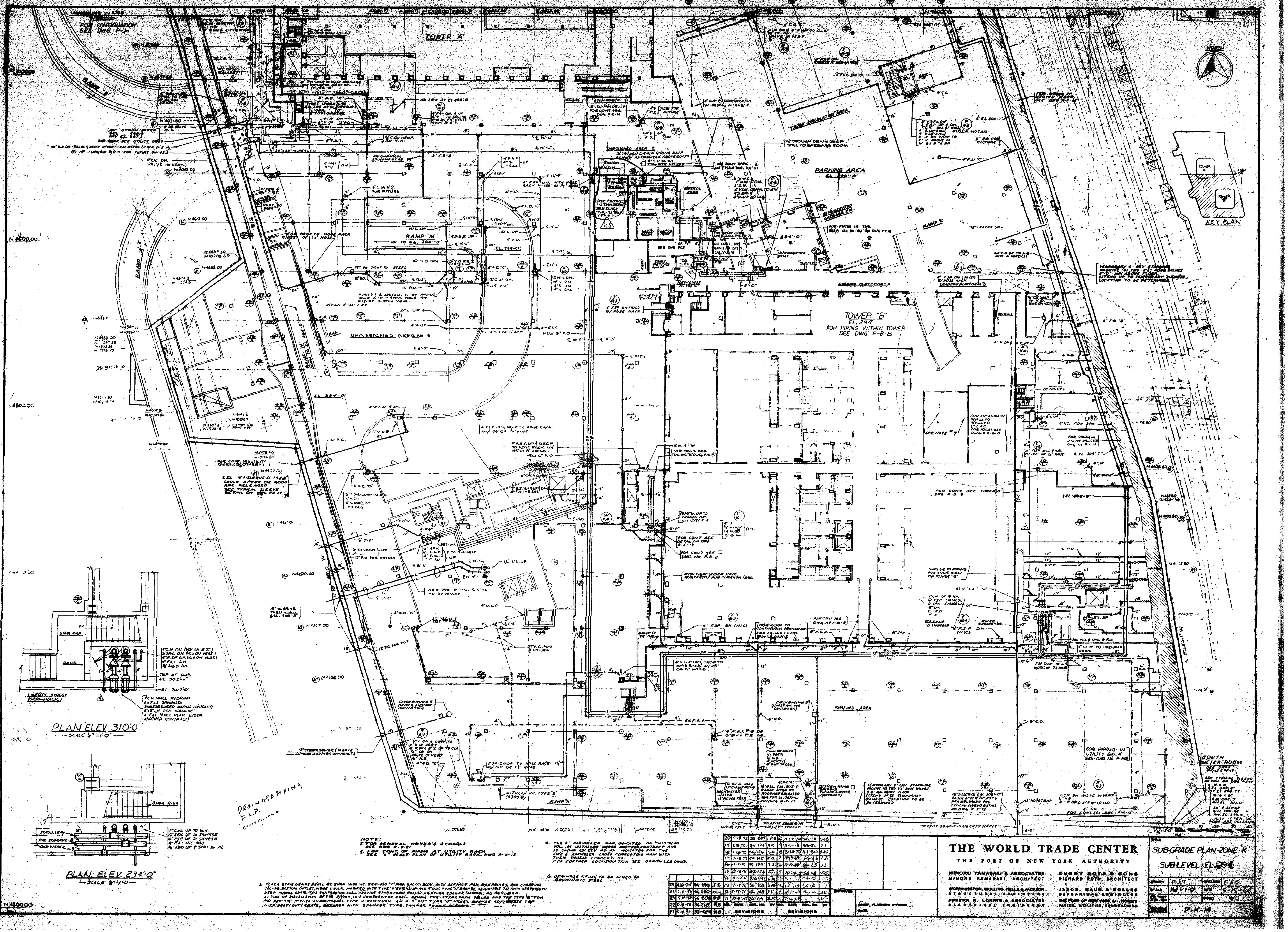
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB GRADE PLAN ZONE "J"
SUB-LEVEL - EL. 290-294

DRAWN	P.J.T.	CHECKED	F.A.S.
SCALE	1/16" = 1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-J-13		


TOWER "A"
FOR CONTINUATION SEE DWG. P-J-
RAMP "M" UP TO EL. 304'-5"
EL. 294'-0
UNASSIGNED AREA No. 3
PARKING AREA EL. 290'-0"
TOWER "B" EL. 294' FOR PIPING WITHIN TOWER SEE DWG. P-B-8
PARKING AREA
RAMP "H"
KEY PLAN
NORTH
SOUTH METER ROOM
PLAN ELEV 310'-0"
SCALE 1/4" = 1'-0"
PLAN ELEV 294'-0"
SCALE 1/4" = 1'-0"
TO EXIST. SEWER IN LIBERTY STREET
THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY
MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON
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JAROS, BAUM & BOLLES
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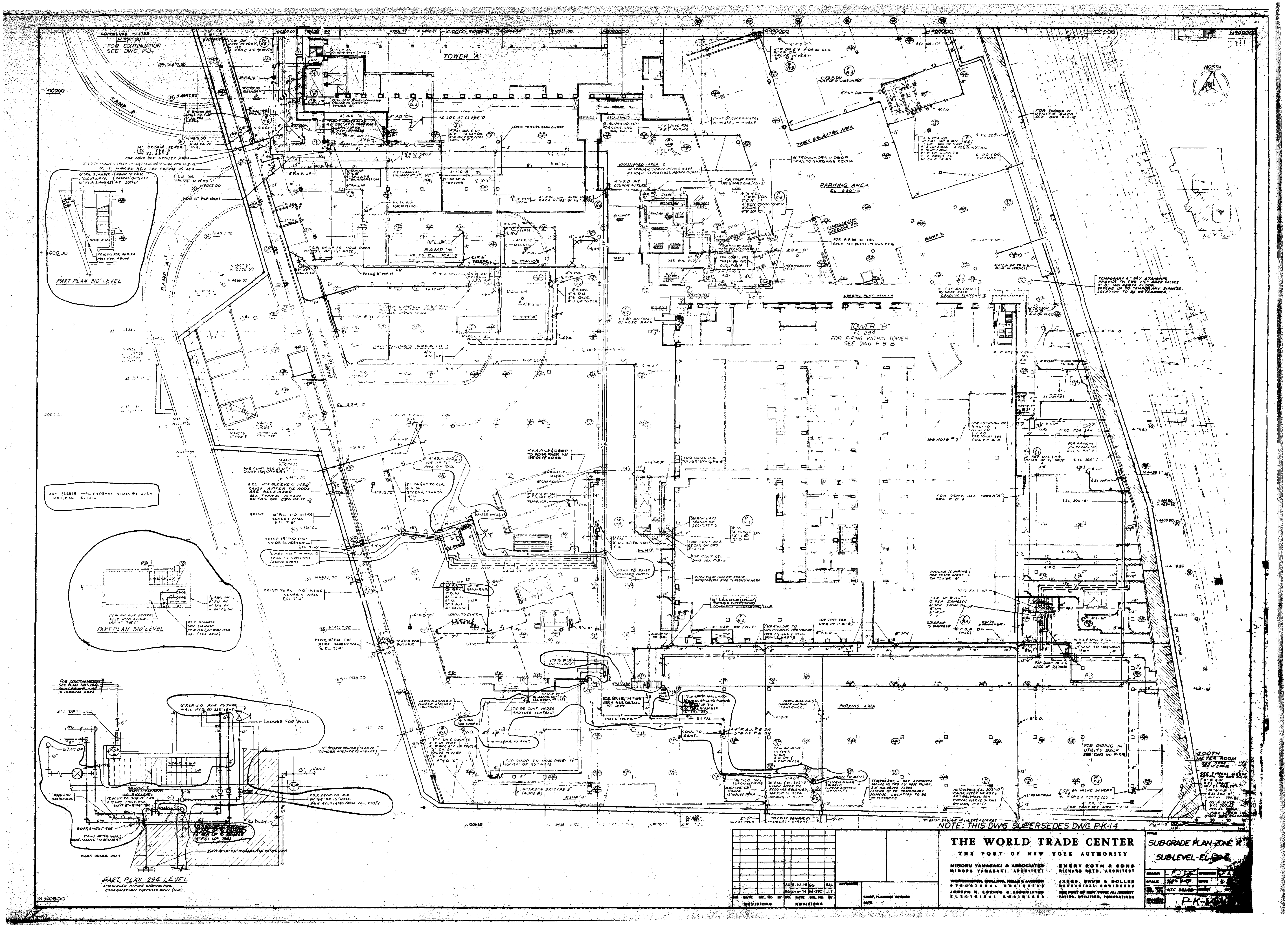
JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS
SUB-GRADE PLAN-ZONE K
SUB-LEVEL-EL. 294
P.J.T.
F.A.S.
5-15-68
P-K-14



TOWER 'A'
TOWER 'B'
EL. 294'
FOR PIPING WITHIN TOWER SEE DWG P-B-8
PARKING AREA
EL 290'-0"
TRUCK CIRCULATION AREA
RAMP 'A'
RAMP 'B'
RAMP 'N'
RAMP 'H'
LOADING PLATFORM
PART PLAN 310' LEVEL
PART PLAN 294' LEVEL
SOUTH METER ROOM
NORTH
NOTE: THIS DWG. SUPERSEDES DWG. P-K-14
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MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS
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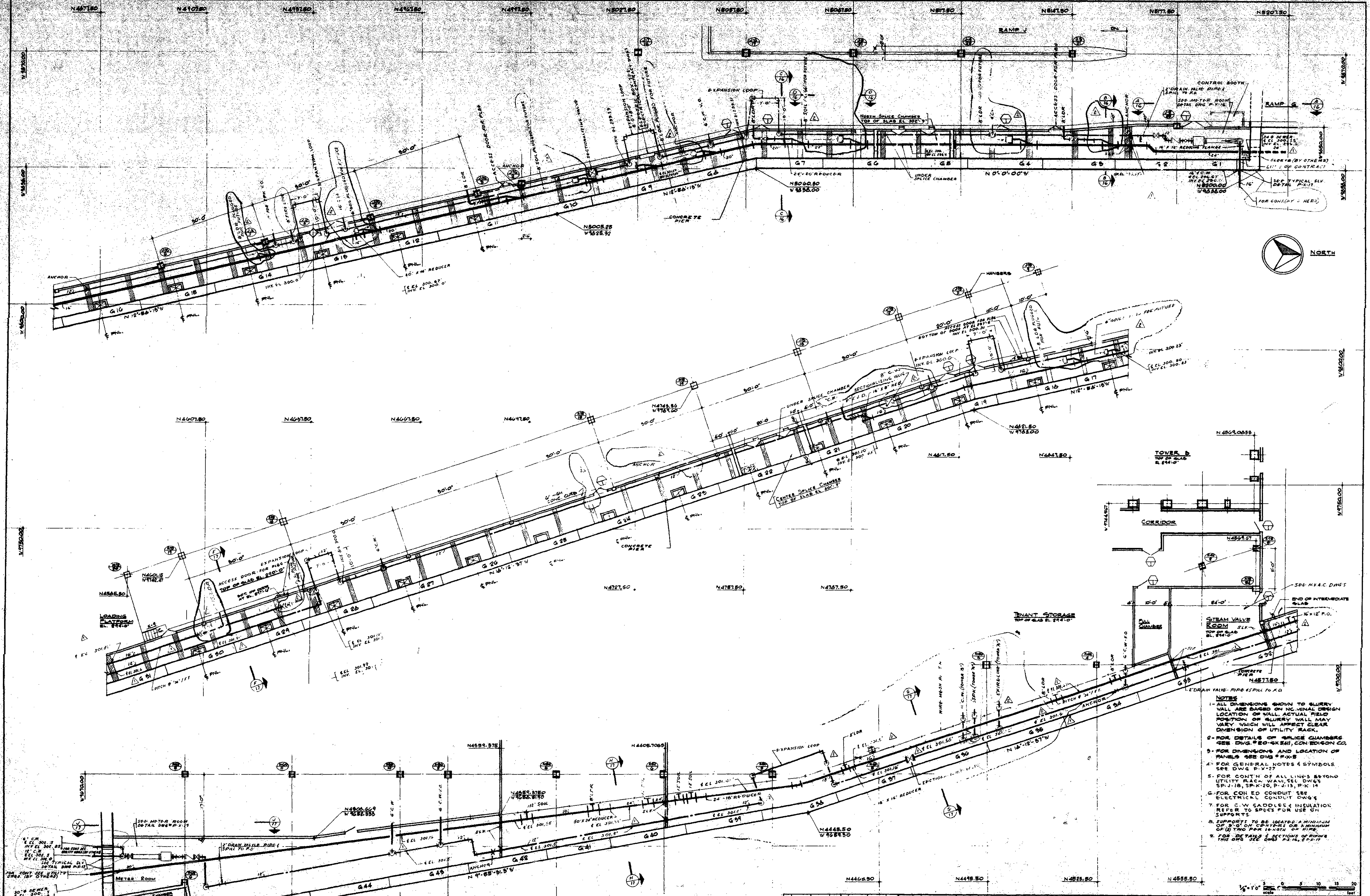
PAVING, UTILITIES, FOUNDATIONS
SUB-GRADE PLAN-ZONE K
SUB-LEVEL-EL.
REVISIONS
CHIEF, PLANNING DIVISION
P-K-14



NOTES

1- ALL DIMENSIONS SHOWN TO SLURRY WALL ARE BASED ON NOMINAL DESIGN LOCATION OF WALL. ACTUAL FIELD POSITION OF SLURRY WALL MAY VARY WHICH WILL AFFECT CLEAR DIMENSION OF UTILITY RACK.

2- FOR DETAILS OF SPLICE CHAMBERS SEE DWG. #EO-SK541, CON EDISON CO.

3- FOR DIMENSIONS AND LOCATION OF PANELS SEE DWG # P-X-8

4- FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27

5- FOR CONT'N OF ALL LINES BEYOND UTILITY RACK WALL, SEE DWG'S SP-J-18, SP-K-20, P-J-13, P-K-14

6- FOR CON ED CONDUIT SEE ELECTRICAL CONDUIT DWG'S

7- FOR C.W SADDLES & INSULATION REFER TO SPEC'S FOR USE ON SUPPORTS.

8. SUPPORTS TO BE LOCATED A MINIMUM OF 9'-0" ON CENTERS OR A MINIMUM OF (2) TWO PER LENGTH OF PIPE.

9. FOR DETAILS & SECTIONS OF PIPING THIS DWG SEE DWGS P-X-16, & P-X-17

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
REVISIONS				REVISIONS			

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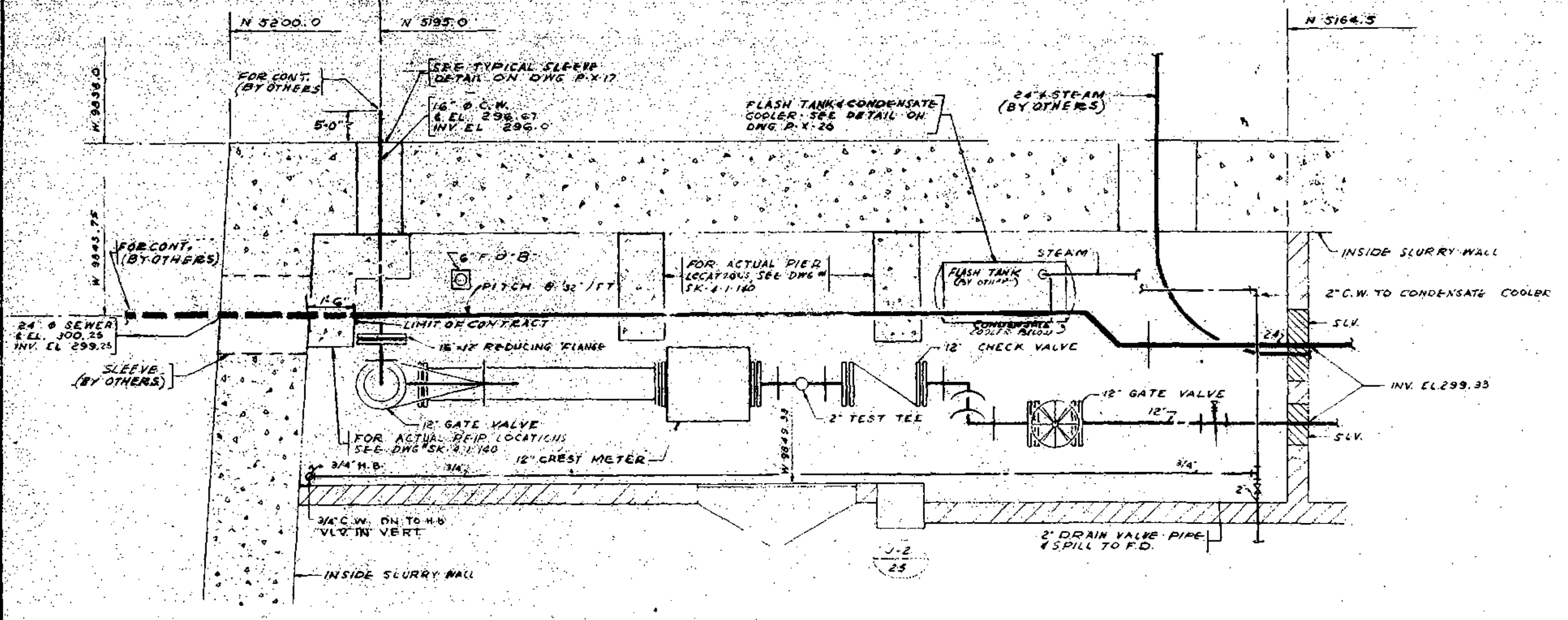
JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

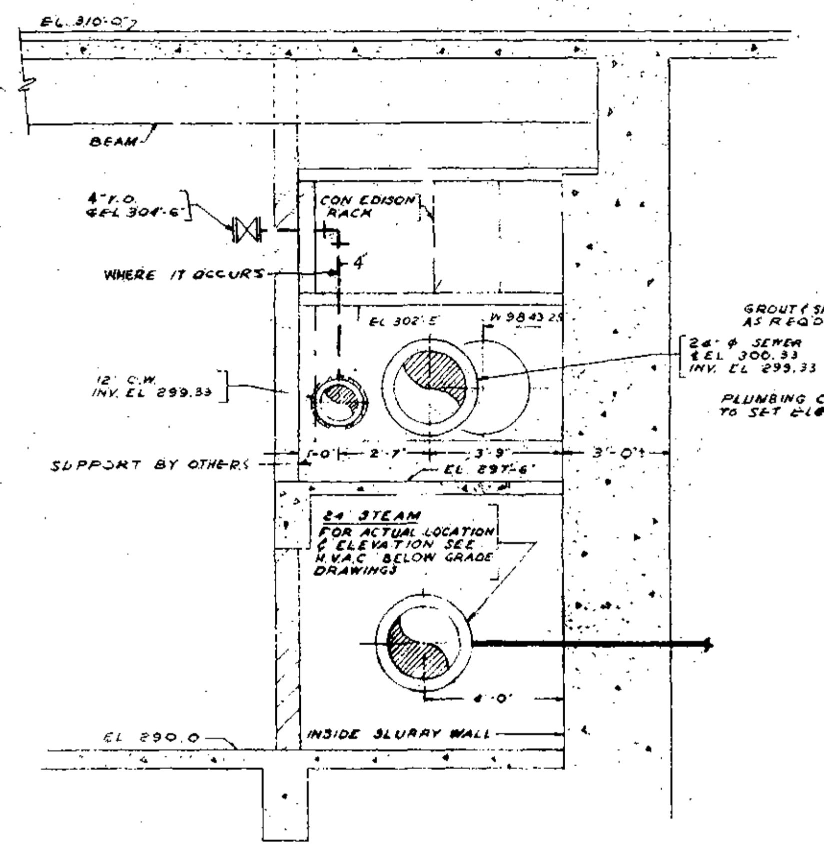
THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: UTILITY RACK EL. [290'-294']

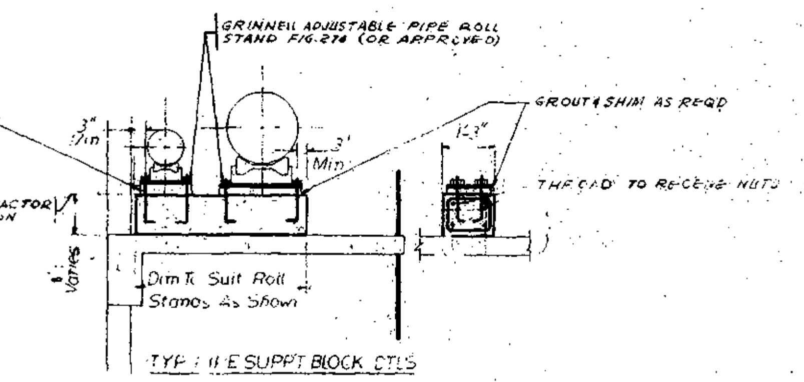
DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	1/8"=1'-0"	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-15		

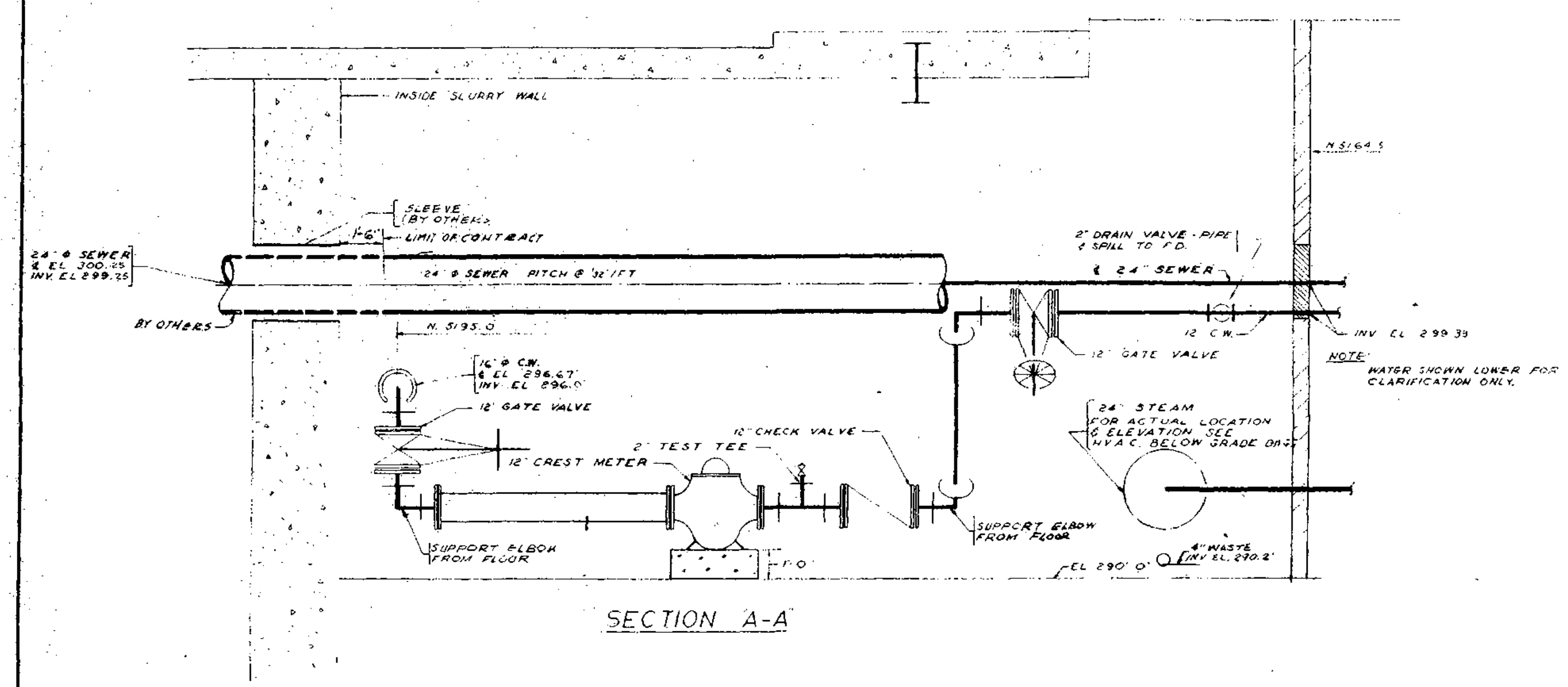


NORTH METER ROOM

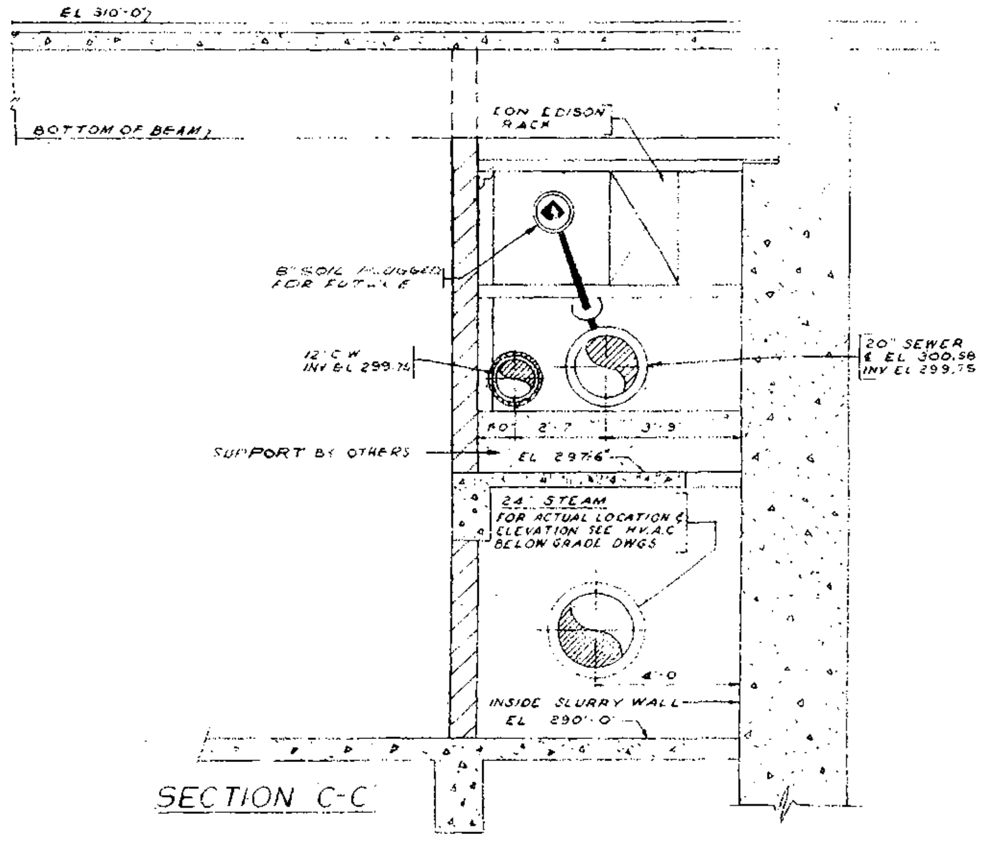


SECTION B-B

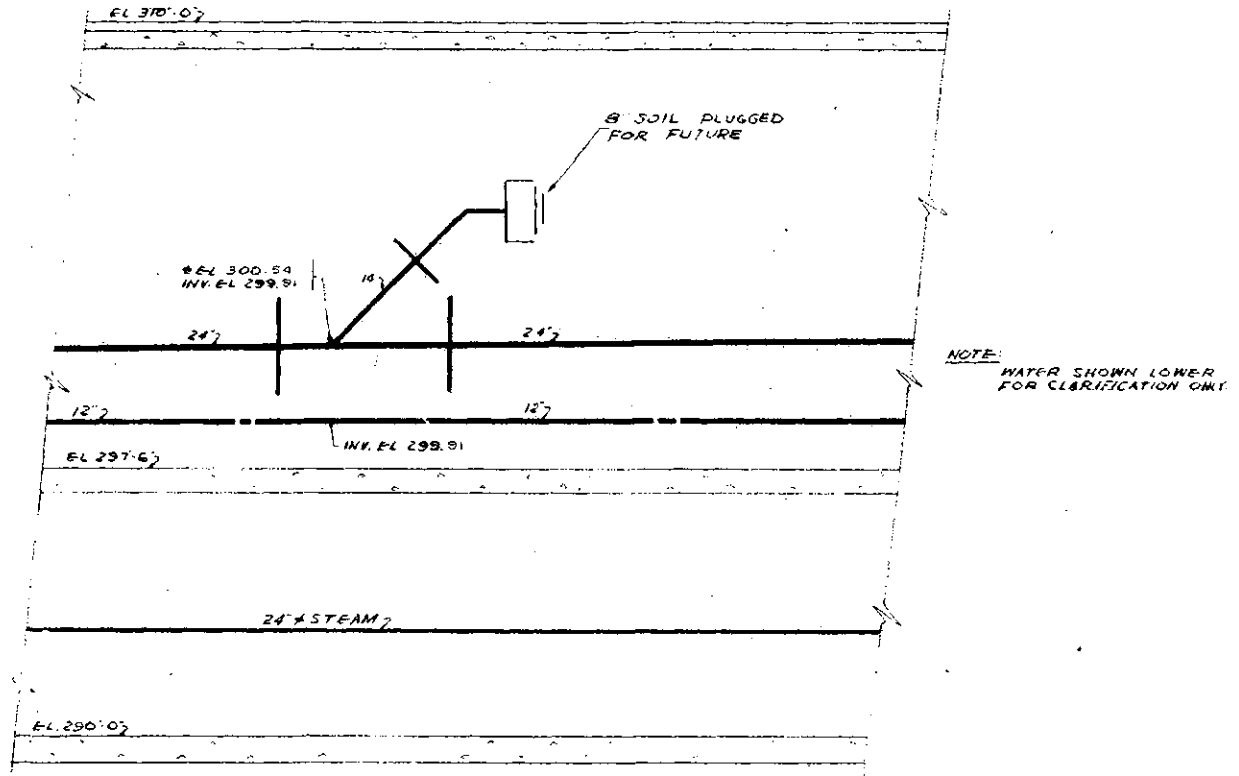




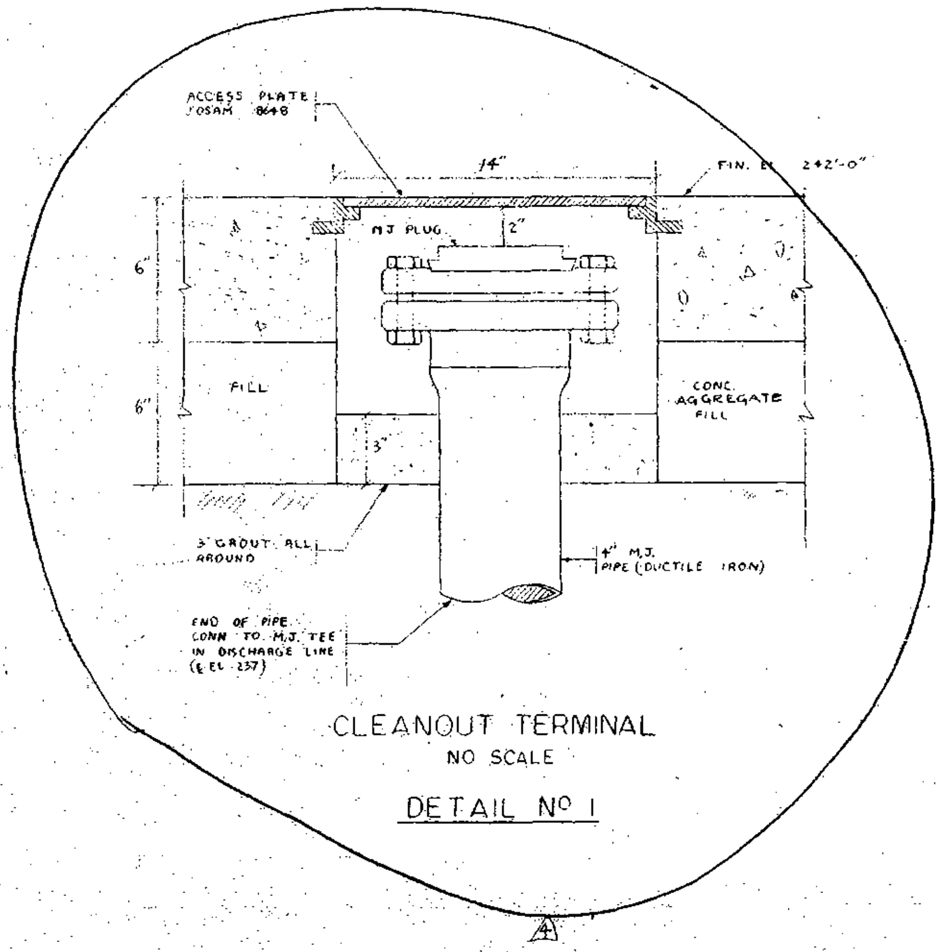
SECTION A-A



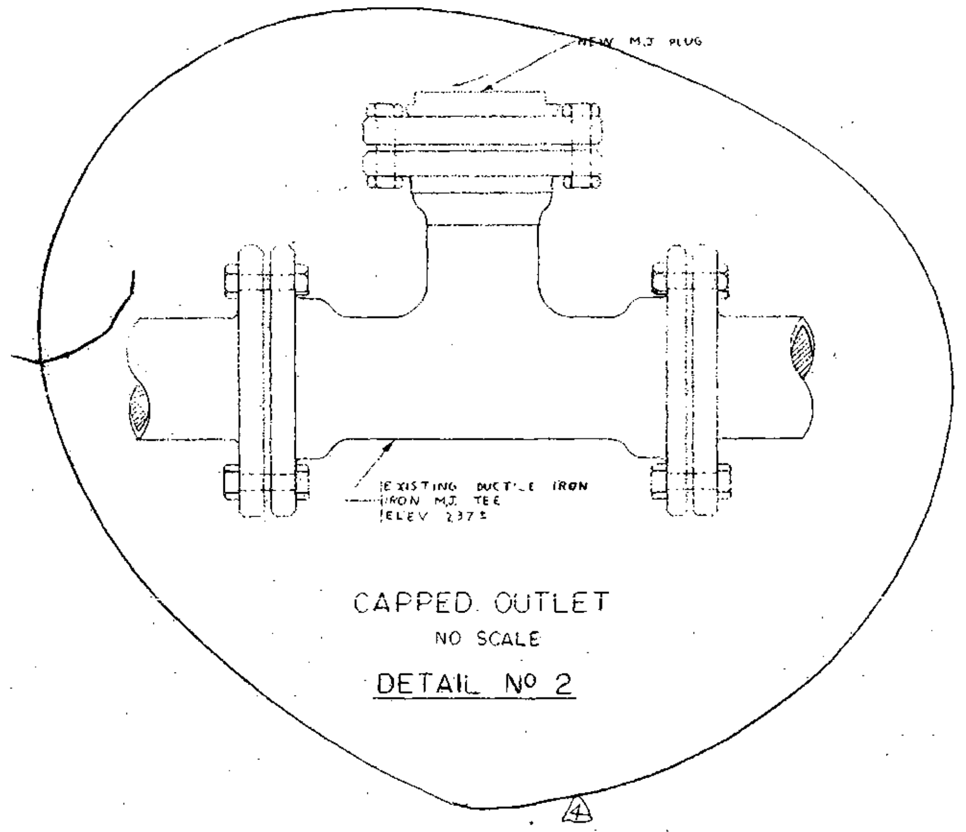
SECTION C-C



SECTION D-D



CLEANOUT TERMINAL
NO SCALE
DETAIL No 1



CAPPED OUTLET
NO SCALE
DETAIL No 2

NOTE

1. FOR GENERAL NOTES & SYMBOLS SEE DWG # P-X-17
2. CONCRETE SUPPORTS PIERS TO BE BY OTHERS
3. 1" INSULATION ON C.W.
4. FOR LOCATION OF SECTIONS SEE P-X-15.

NO.	DATE	BUL. NO.	BY
4	10-13-72		RB
3	1-20-69	SG-6	J.C.
2	9-17-68	SG-2	A.F.
1	4-10-68		E.M.

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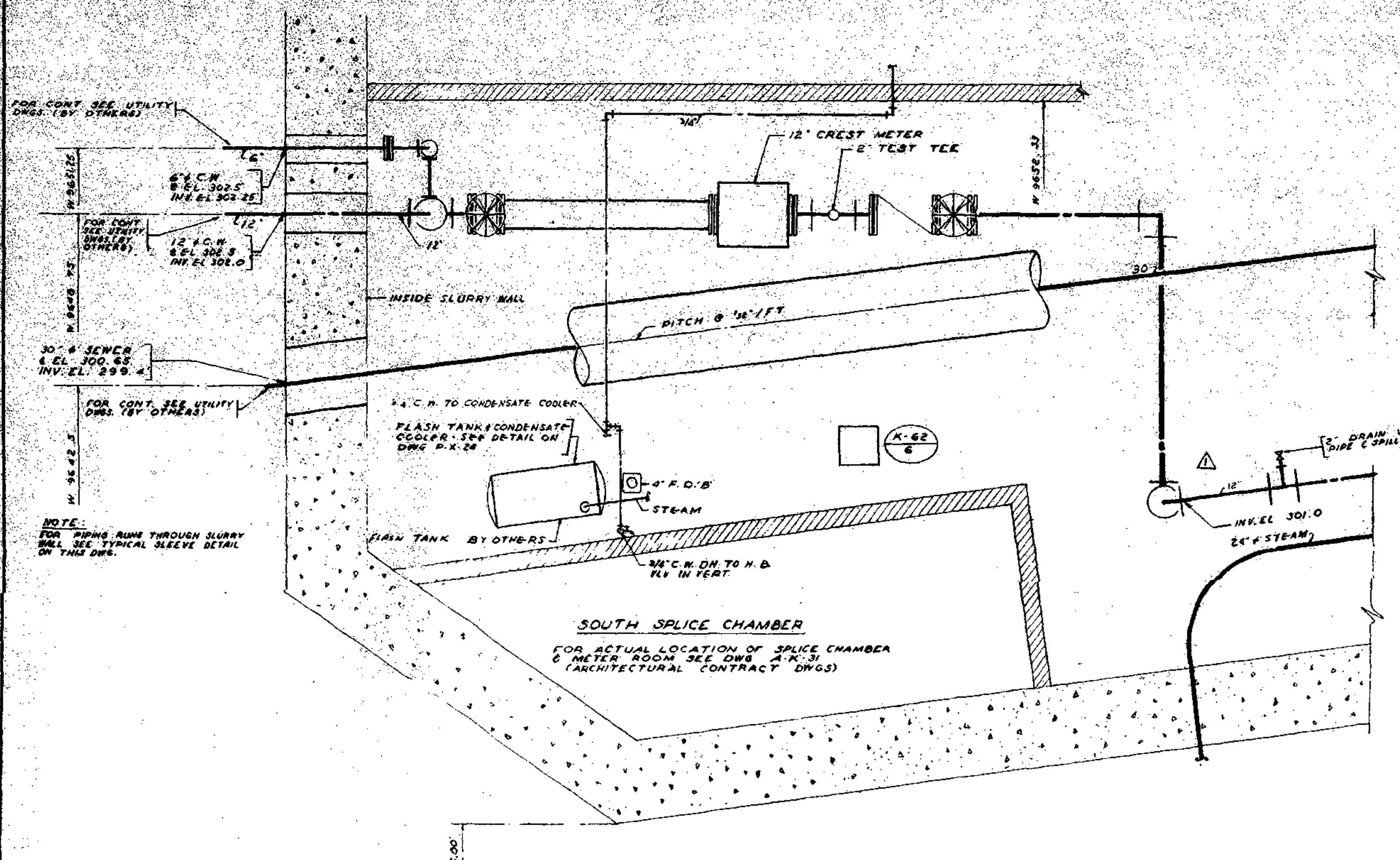
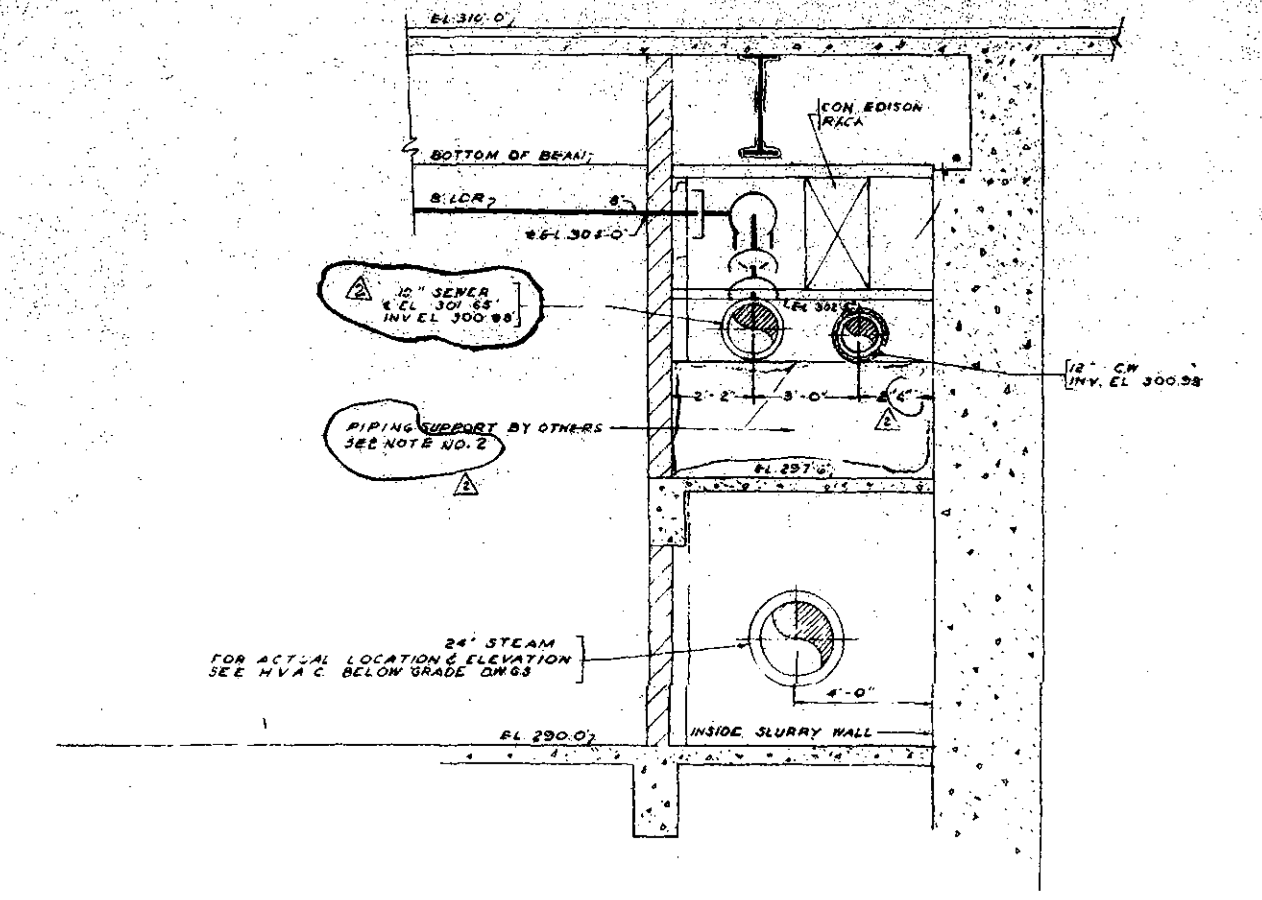
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No. 1

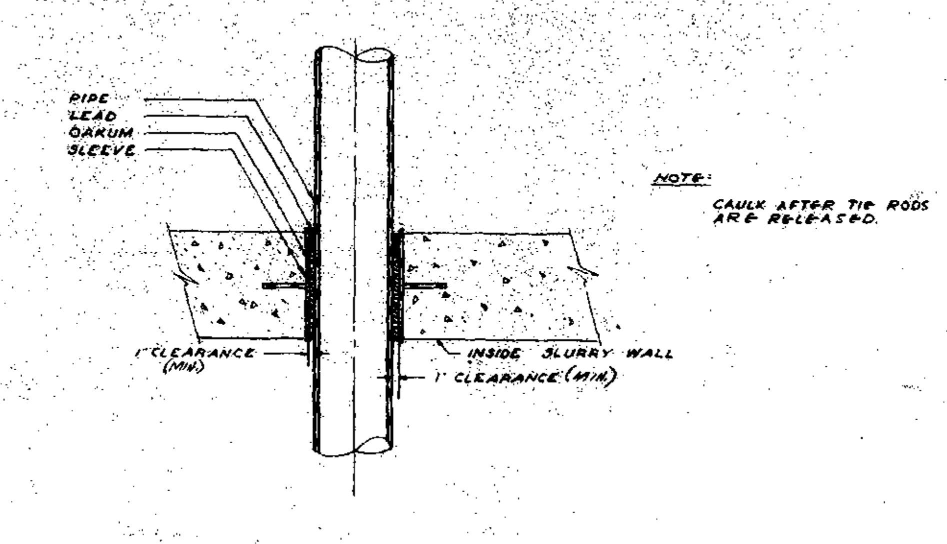
DRAWN	W.F.M	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-16		



SOUTH METER ROOM

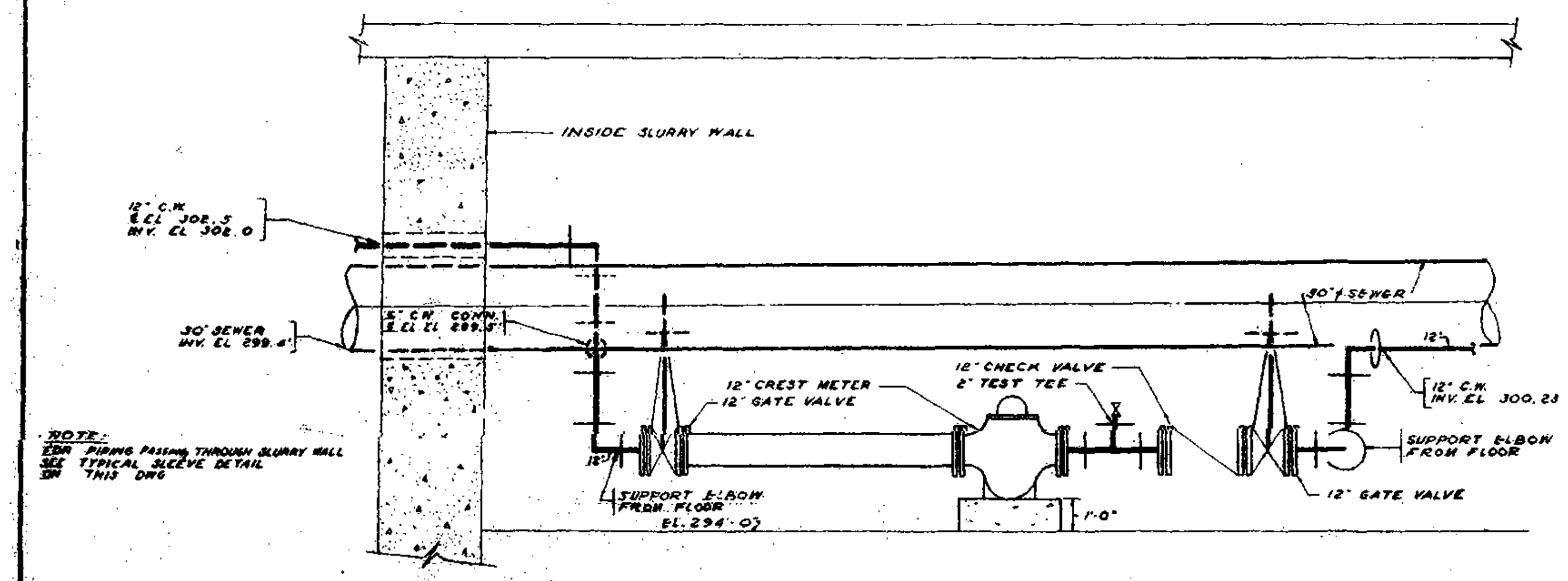


SECTION F-F

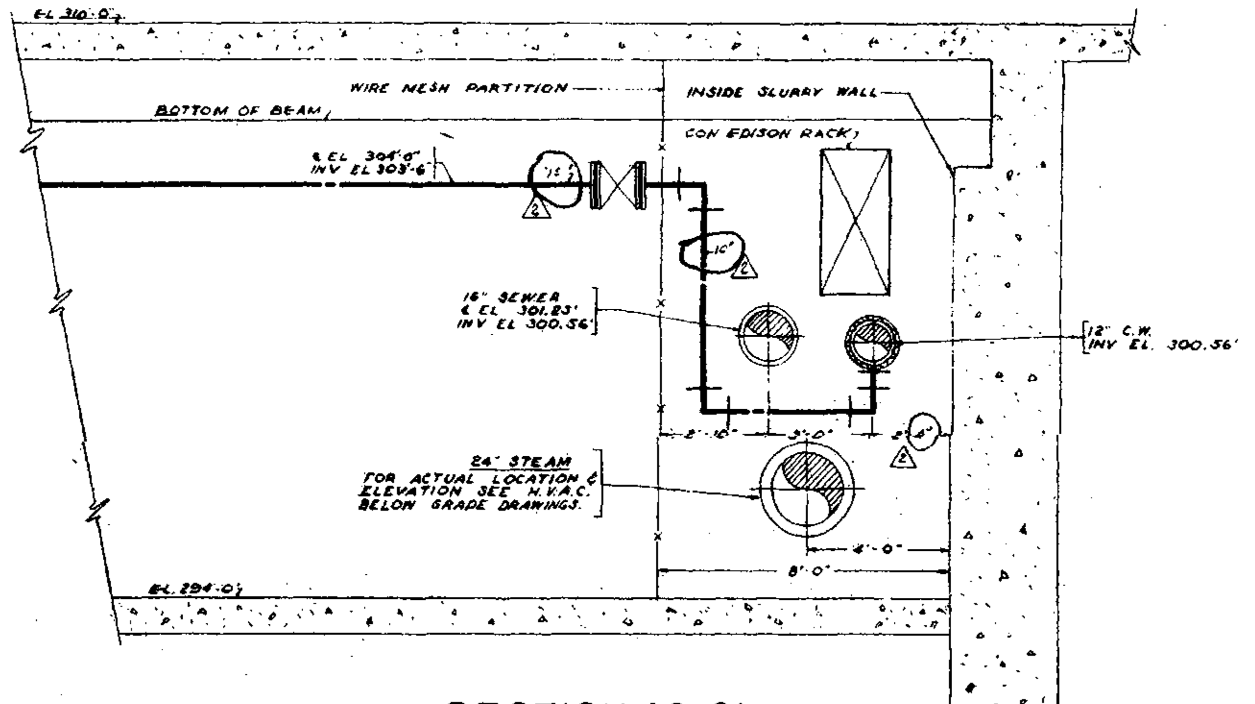


TYPICAL SLEEVE DETAIL

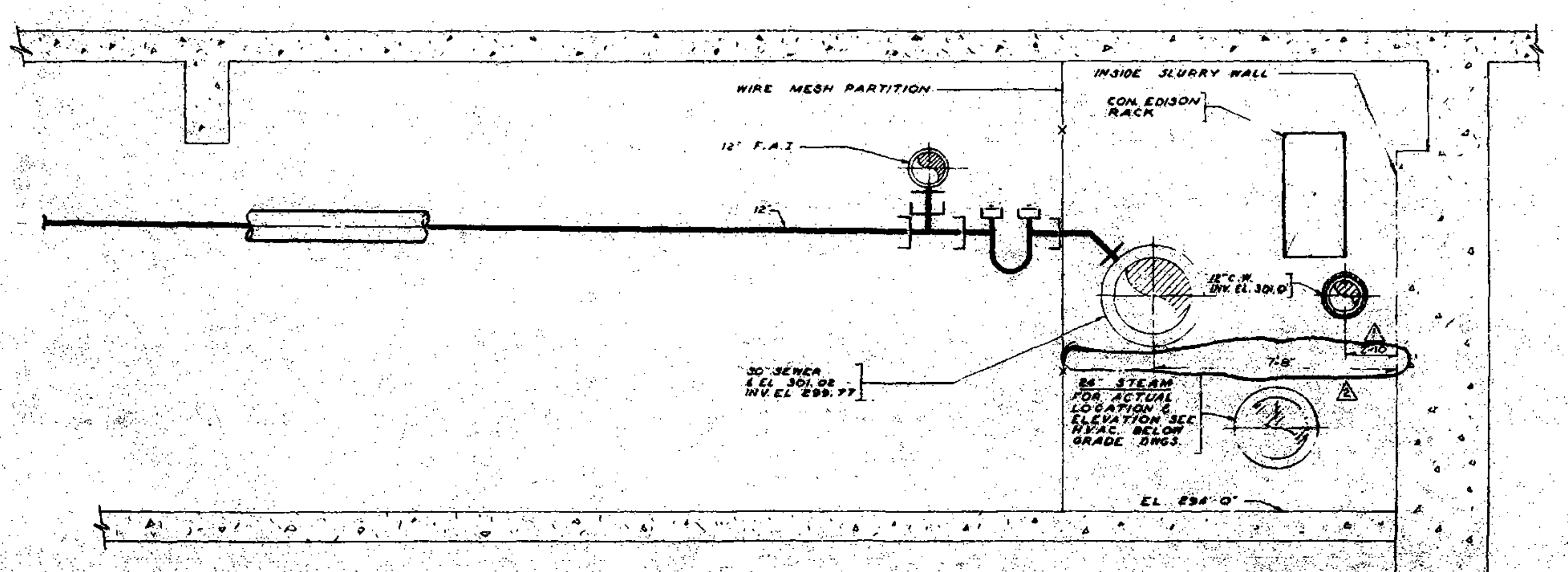
NO SCALE



SECTION J-J



SECTION G-G



SECTION H-H

NOTES:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG # P-X-27
2. FOR SUPPORTS OF SEWER & WATER LINES SEE STRUCTURAL DRAWINGS. 2
3. 1 INSULATION ON C.W.
4. FOR LOCATION OF SECTIONS SEE P-X-16.

NO.	DATE	BUL. NO.	BY
2	12-69	66-6	E.M.
1	10-68		J.F.

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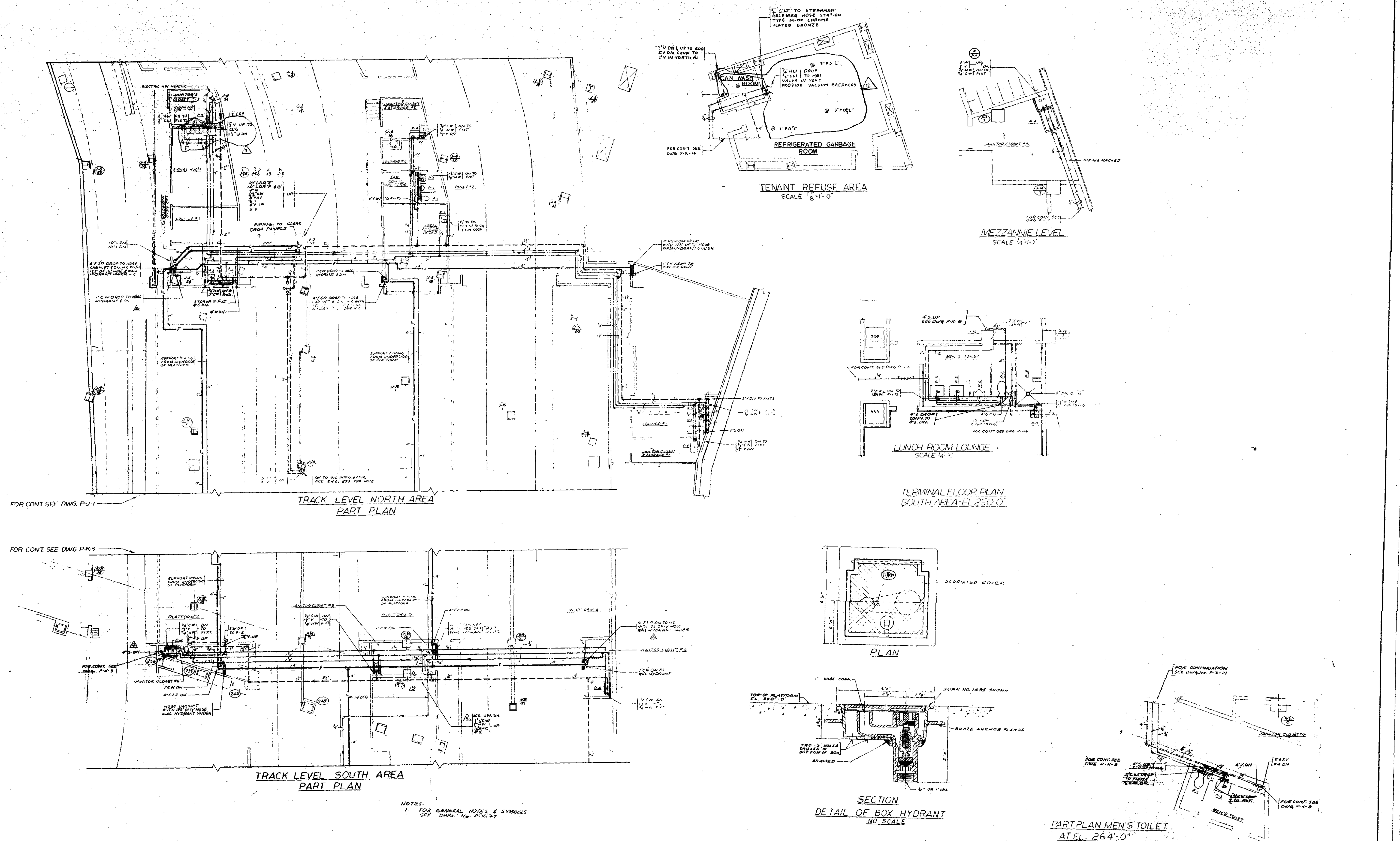
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE	DETAIL SHEET No. 2		
DRAWN	W.F.M.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-17		



NOTES.
1. FOR GENERAL NOTES & SYMBOLS SEE DWG. No. P-X-27

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				10	10-6-71	182	H.A.
				9	1-27-71	SG-118	SJC
				8	1-27-71	SG-120	G.P.
				7	10-6-71	SG-173	J.I.
				6	3-20-70	SG-33	J.I.
				5	12-19-69	SG-16	SJC
				4	6-3-69	SG-15	J.C.
				3	1-20-69	SG-6	K.W.
12	5-18-72	SG 208	RB	2	9-17-68	SG-2	J.E.
11	5-18-72	SG 191	RB	1	7-16-68		E.M.

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MECHANICAL ENGINEERS

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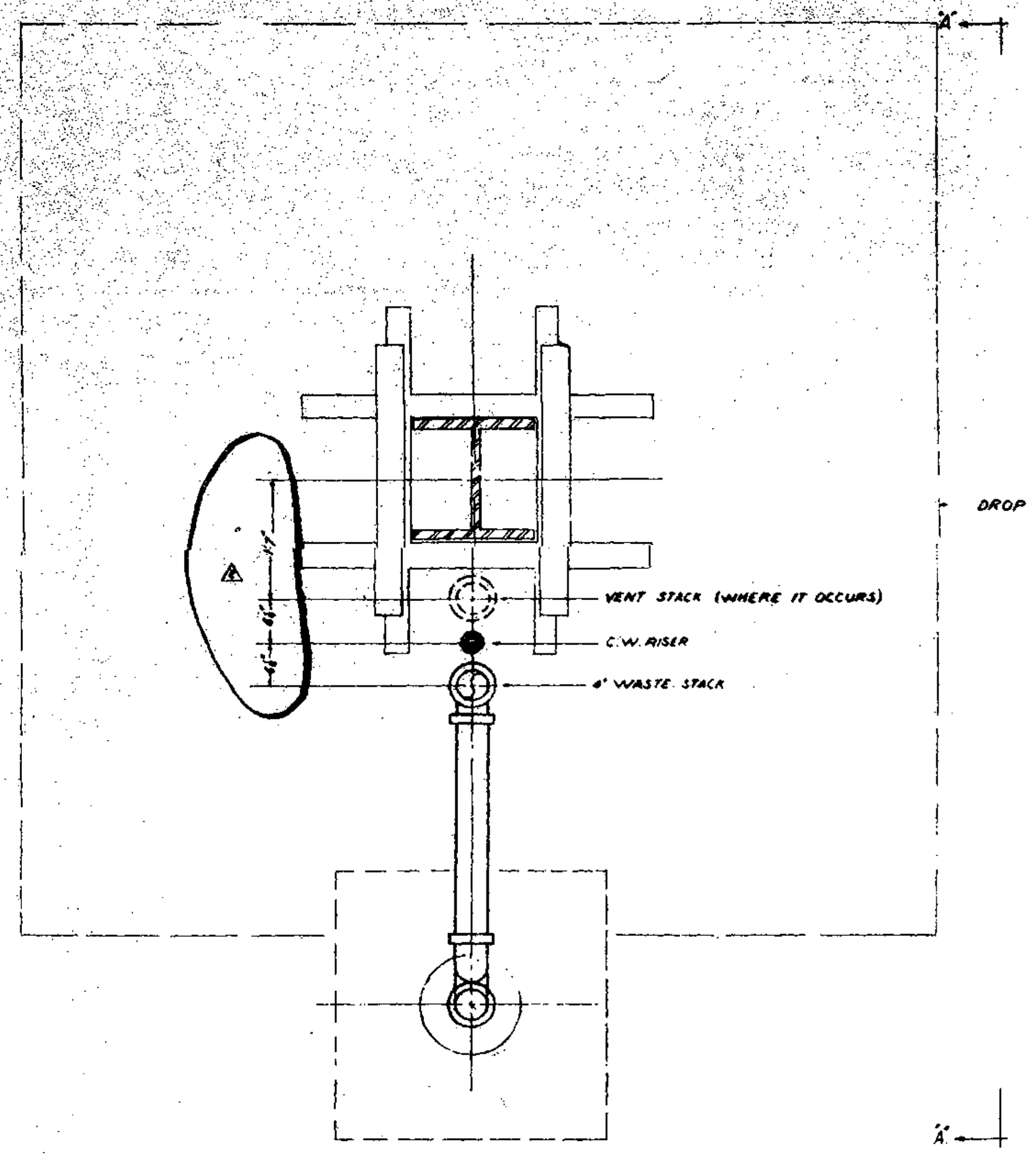
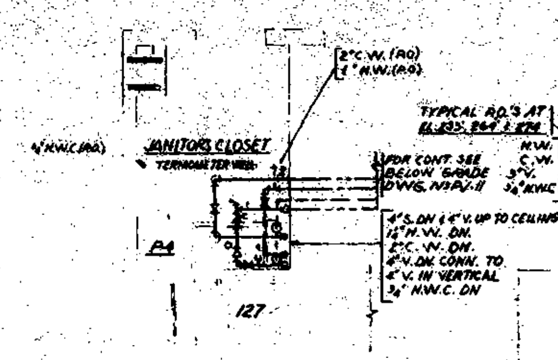
PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No.3

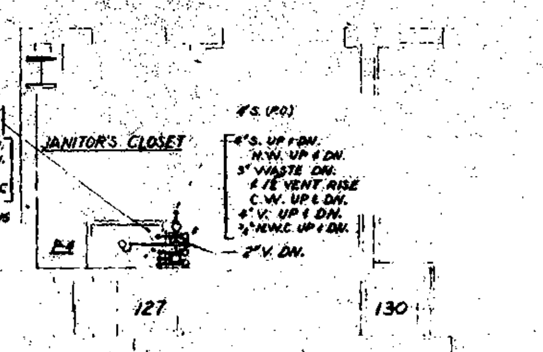
DRAWN	R.A.	CHECKED	F.A.S.
SCALE	AS NOTED	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-18		



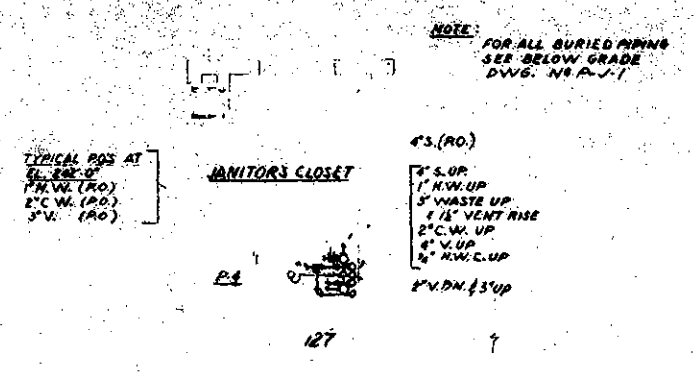
PLAN
DETAIL TYPICAL COLUMNS
4" WASTE STACK - C.W. RISER & VENT STACK
&
LOCATION OF FLOOR DRAIN



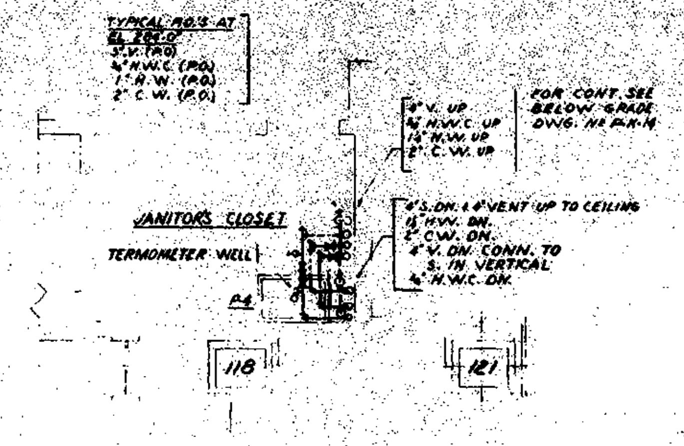
PART PLAN OF MOP RECEPTOR
ZONE "J" EL. 284'-0"



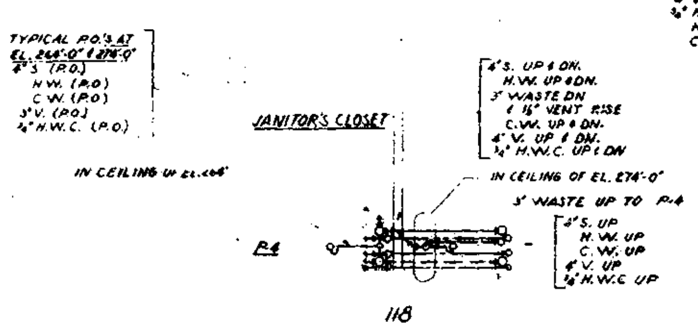
PART PLAN OF MOP RECEPTOR
ZONE "J" EL. 253'-0", 264'-0" & 274'-0"



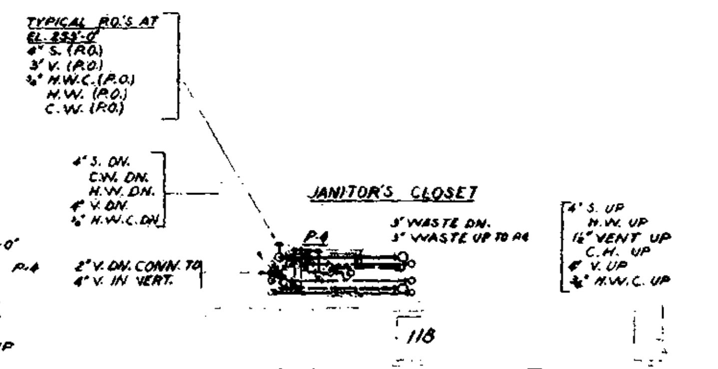
PART PLAN OF MOP RECEPTOR
ZONE "J" EL. 242'-0"



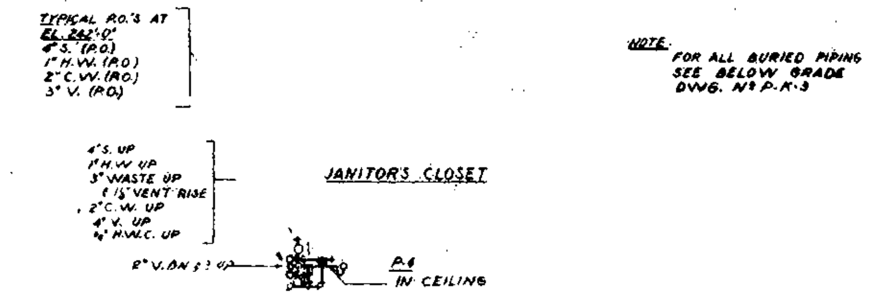
PART PLAN OF MOP RECEPTOR
ZONE "K" EL. 284'-0"



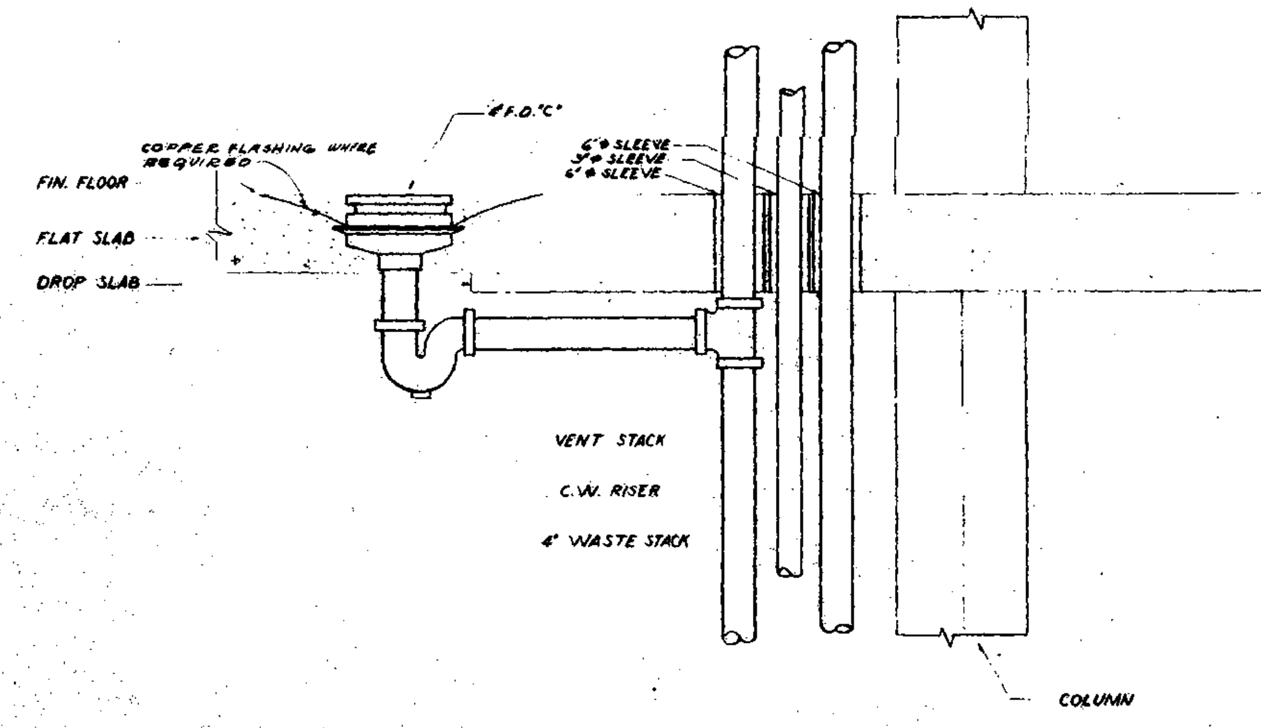
PART PLAN OF MOP RECEPTOR
ZONE "K" EL. 264'-0" & 274'-0"



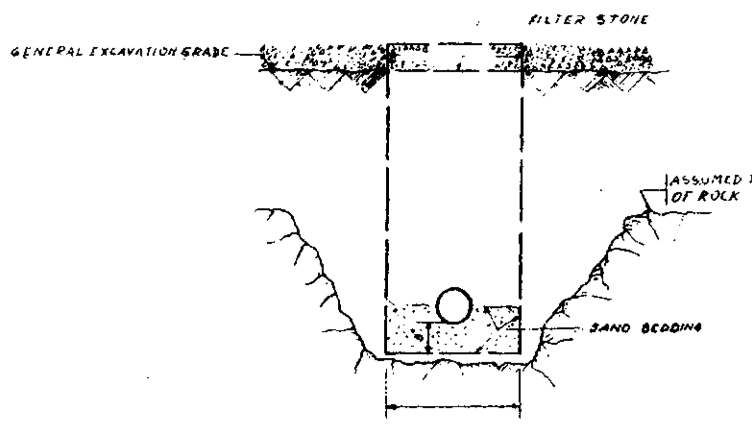
PART PLAN OF MOP RECEPTOR
ZONE "K" EL. 253'-0"



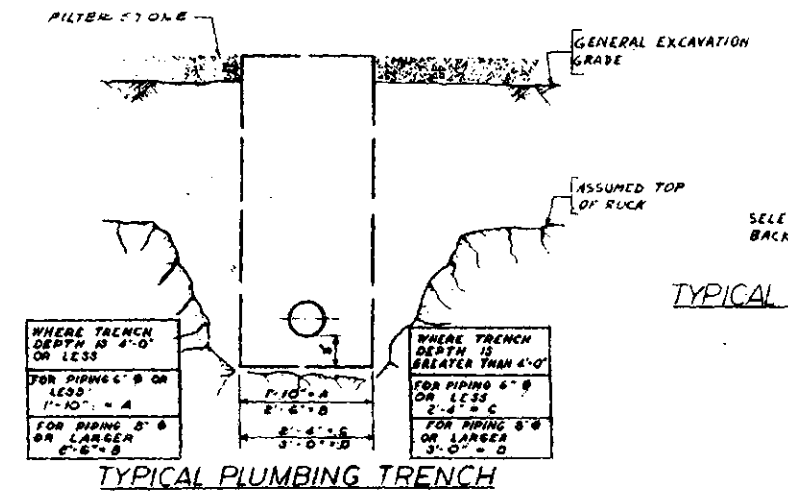
PART PLAN OF MOP RECEPTOR
ZONE "K" EL. 242'-0"



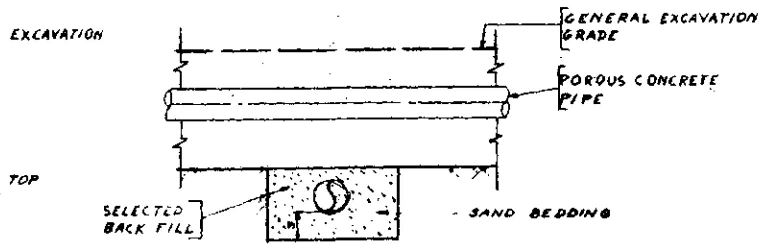
SECTION "A"-"A"



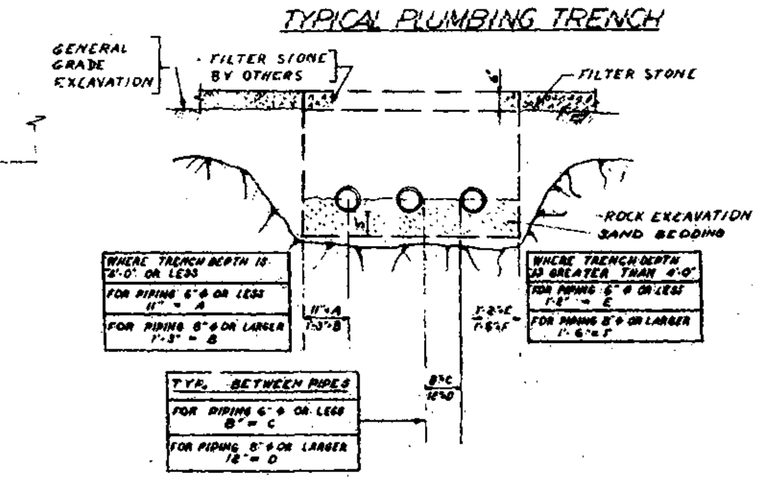
TYPICAL PLUMBING TRENCH



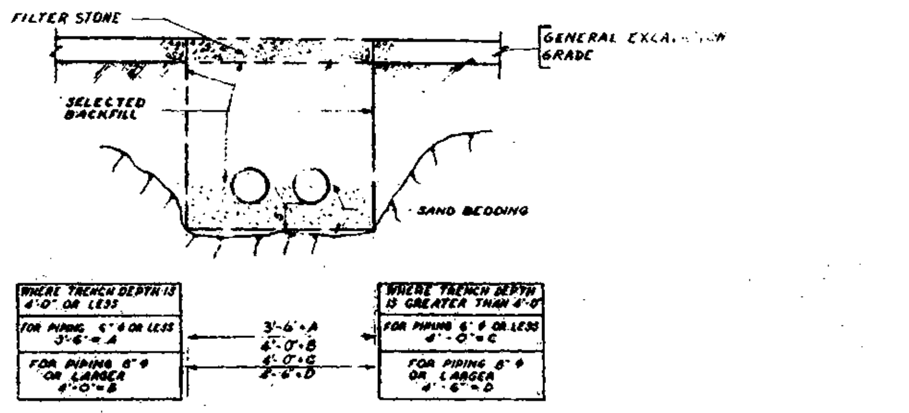
TYPICAL PLUMBING TRENCH



TYPICAL INTERSECTION OF DRAINAGE AND PLUMBING TRENCHES



TYPICAL PLUMBING TRENCH
FOR 3 OR MORE PIPES



TYPICAL PLUMBING TRENCH
FOR TWO PIPES

NOTE:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-37
2. FOR TRENCHING DETAILS SEE DWGS P-X-30, P-X-31, & P-X-32

NO.	DATE	BUL. NO.	BY
2	1-20-69	56-6	J.C.
1	9-17-68	56-2	JE

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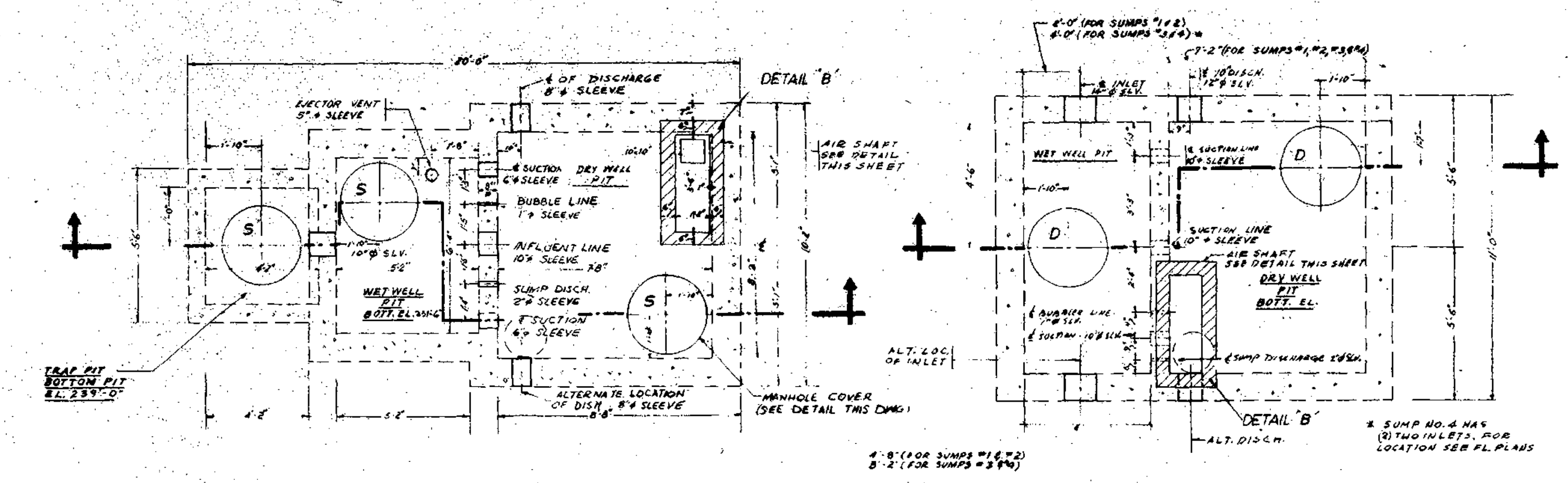
DATE

THE WORLD TRADE CENTER
THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET No. 4

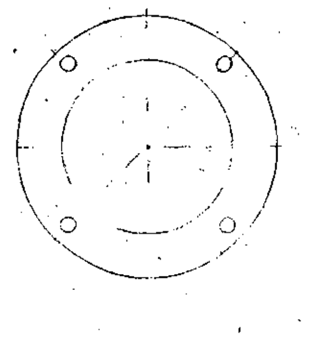
DRAWN	J.E.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-19		



EJECTOR PIT

SUMP PIT

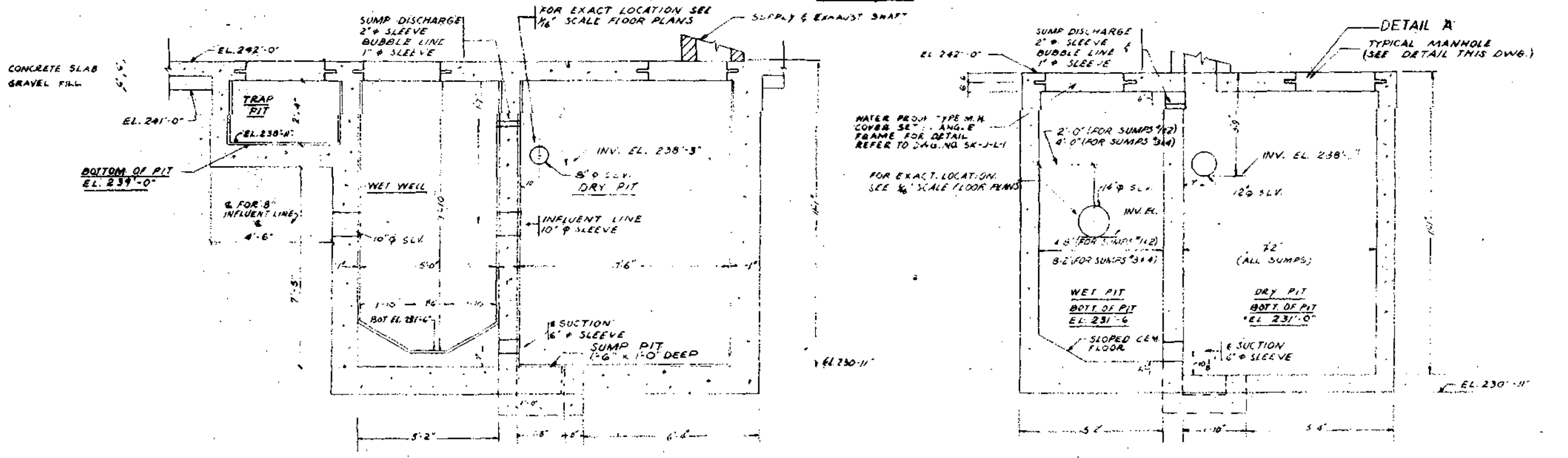
DETAIL OF SLEEVE, MANHOLES & EXHAUST SHAFTS



PUMP SUPPORT MOUNTING PLAN

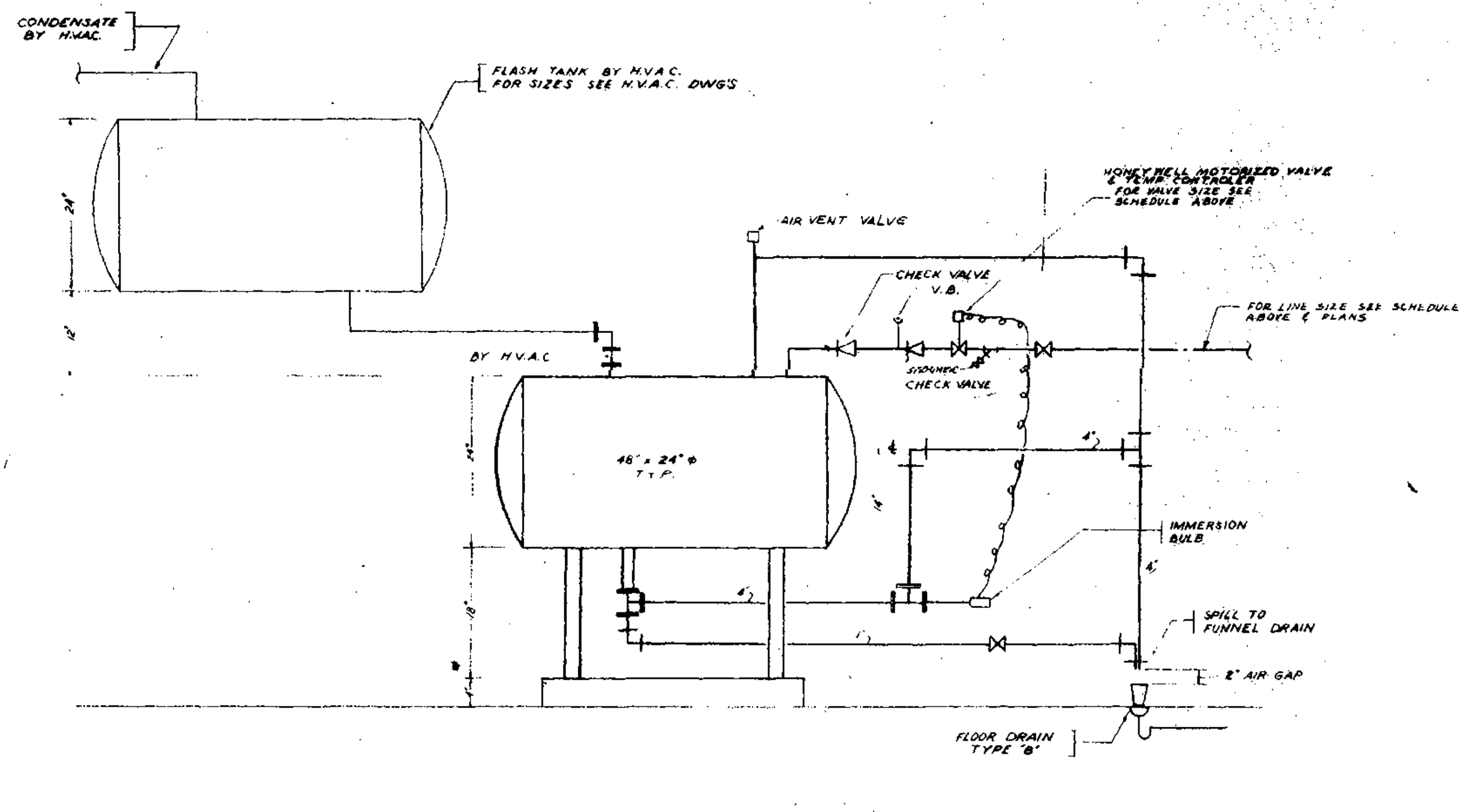
SCHEDULE FOR CONDENSATE TANK WATER VALVE

CONDENSATE COOLER	VALVE SIZE	LINE SIZE (INCLUDING ALL OTHER VALVES	G.P.M. REQ'D.	PRESS. DROP
#1	1½"	2"	25	2 P.S.I.
#2	1"	1¼"	12	2 P.S.I.
#3	¾"	¾"	4	2 P.S.I.
#4	1"	1¼"	12	2 P.S.I.
#5	1½"	1½"	30	2 P.S.I.



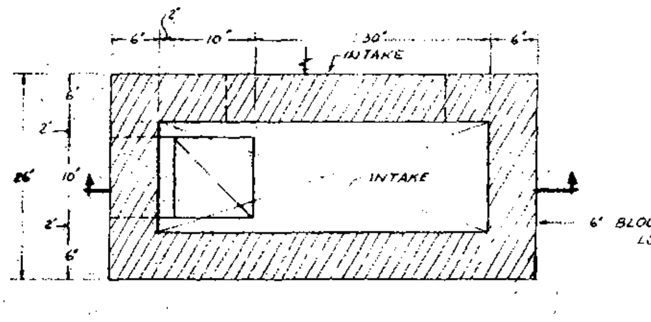
SECTION EJECTOR PIT

SECTION SUMP PIT

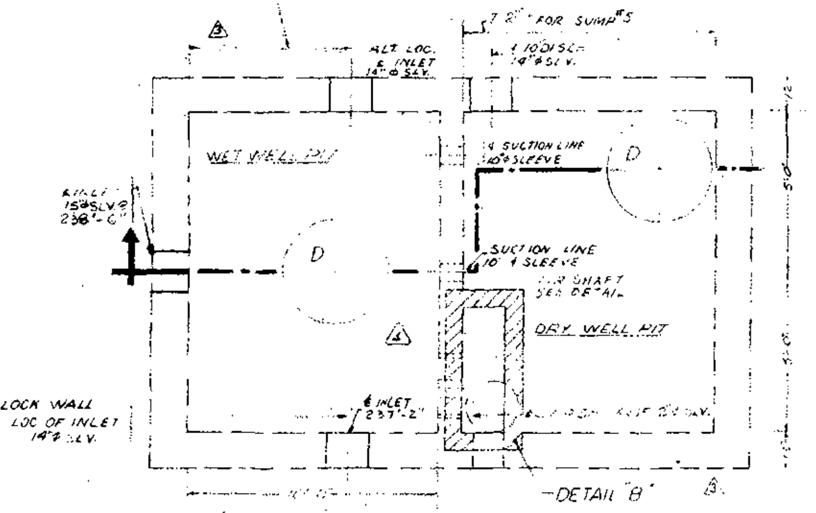


CONDENSATE COOLER DETAIL

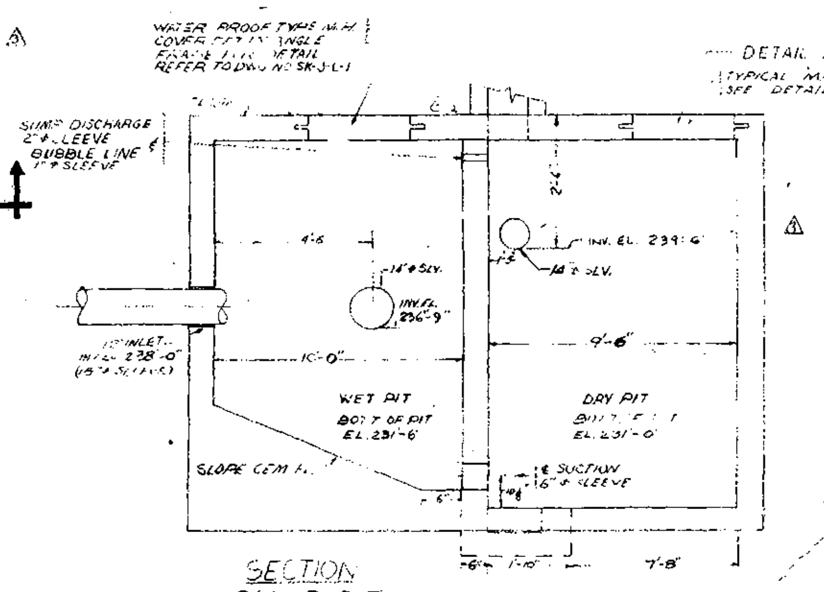
(FOR LOCATION & C.W. SIZES SEE FLOOR PLANS)



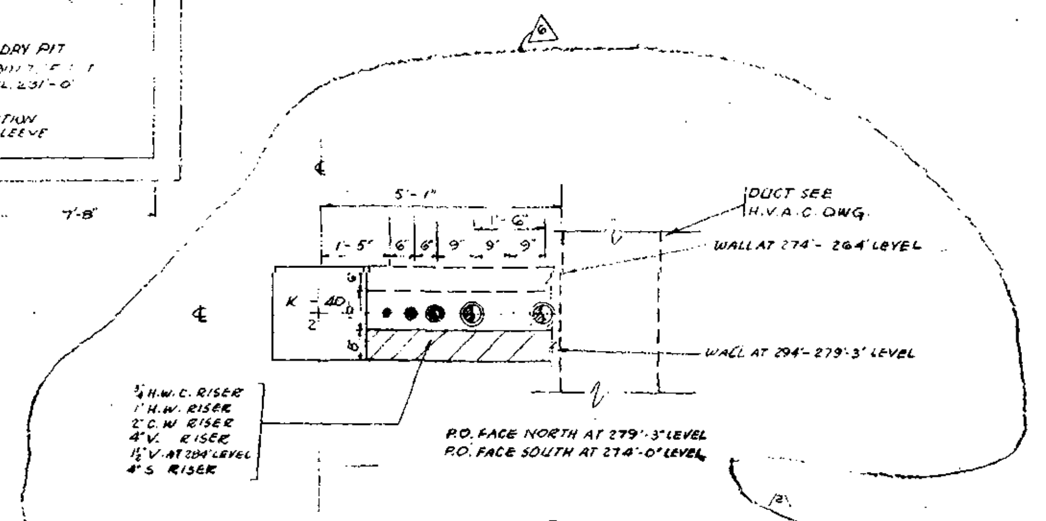
PLAN TYP. SUMP & EJECTOR PIT AIR SHAFT ENCLOSURE



SUMP PIT # 5

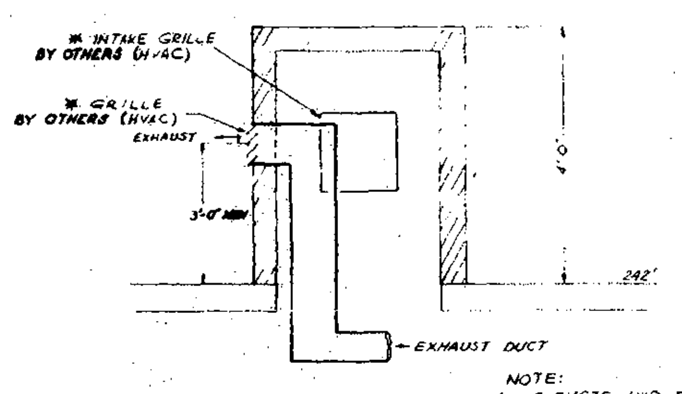


SECTION SUMP PIT



PART PLAN OF STACK ⑥ AT EL.290'-0"

NO SCALE

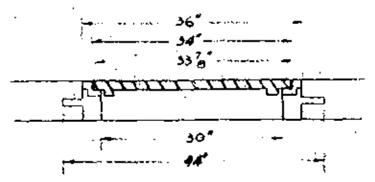


NOTE:

1. ALL DUCTS AND GRILLE BY OTHERS (H.V.A.C.) EXHAUST DUCT BY OTHERS (H.V.A.C.) TO BE CONNECTED TO EXHAUST FAN. EXHAUST FAN BY PLUMBER

ELEVATION

DETAIL 'B'



ELEVATION OF M.H. FRAME & COVER (BY OTHERS)

(FLOCKHART FOUNDRY CO. TYPE 600 CE NO. 62056)

DETAIL 'A'

NOTE:

1. FOR GENERAL NOTES & SYMBOLS SEE DWG. NO. P-X-27

NO.	DATE	BUL. NO.	BY
6	3-17-70	SG-51	J.J.
5	12-19-69	SG-5	S.J.C.
4	3-19-69	SG-10	B.V.
3	1-3-67	SG-6	W.B.
2	9-17-68	SG-2	J.E.
1	7-10-68		A.E.

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CHIEF, PLANNING DIVISION

DATE

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THE PORT OF NEW YORK AUTHORITY

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JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS

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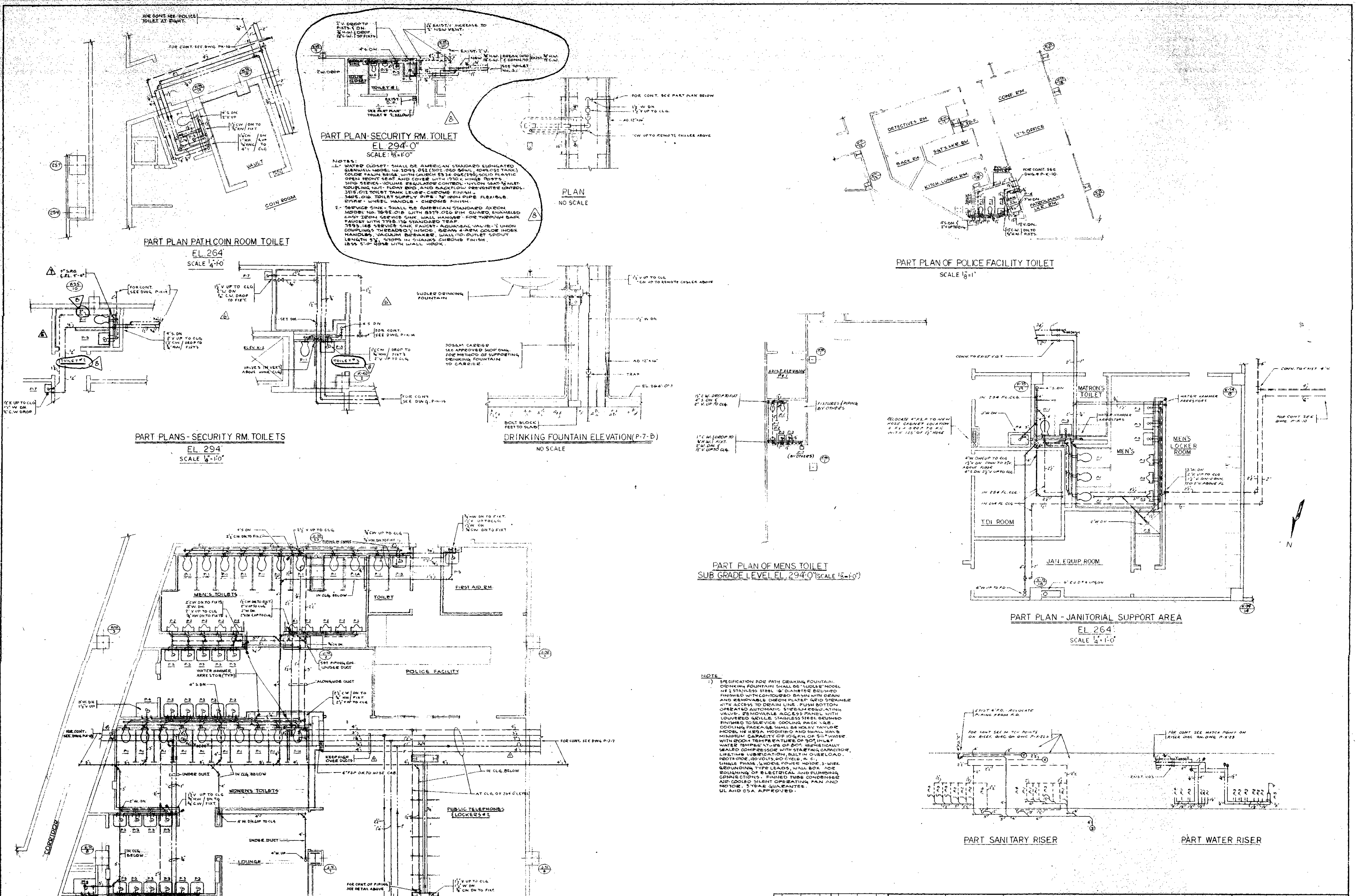
TITLE: DETAIL SHEET Nº 5

DRAWN	J.E.	CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-20		



NO.	DATE	BUL. NO.	BY
8	4-16-74	SG-290	J.I.
7	5-18-72	SG 218	RB
6	5-18-72	SG-207	RB
5	8-17-71	SG 141	LM.
4	1-27-71	SG-118	S.J.C.
3	10-6-71	SG-175	J.I.
2	3-11-70	SG-51	J.I.
1	3-20-70	SG-33	J.I.

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MECHANICAL ENGINEERS

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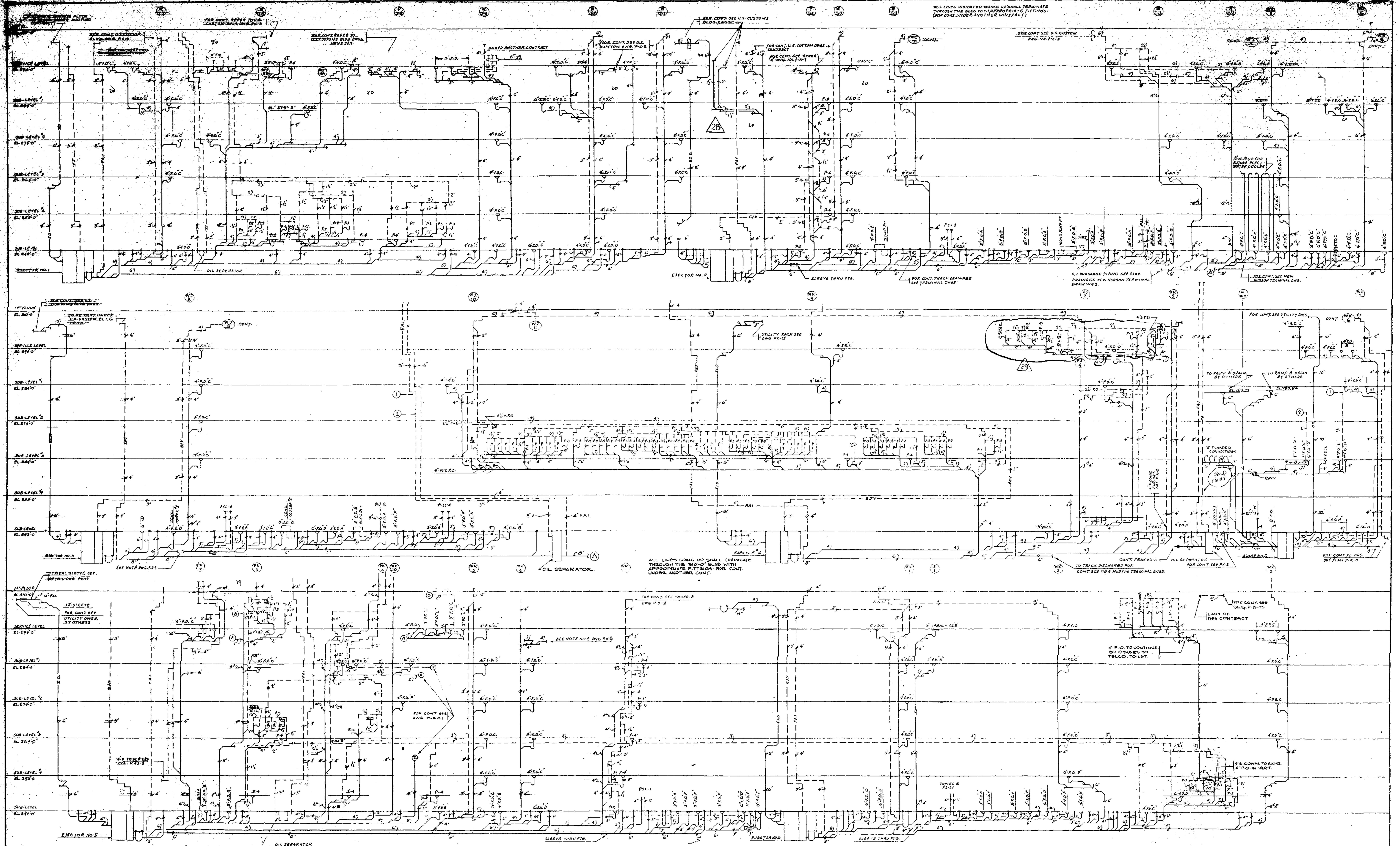
PAVING, UTILITIES, FOUNDATIONS

TITLE: DETAIL SHEET Nº 6

DRAWN	S.J.C.	CHECKED	F. A. S.
SCALE	AS NOTED	DATE	1-29-69
PROJECT NUMBER		SHEET	
DRAWING NUMBER	P-X-2[illegible]		



KEY OF SYMBOLS

- CLEAN OUT & DECK PLATE
- CLEAN OUT AT BASE OF STACK
- INCREASOR
- RUNNING TRAP W/ DOUBLE CLEANOUTS
- RUNNING TRAP W/ SINGLE CLEANOUT
- PLUGGED OUTLET - FUTURE VENT STACK
- PLUGGED OUTLET FUTURE WASTE & SOIL STACK
- PLUGGED OUTLET FUTURE HORZINTAL

OIL SEPARATOR
SEE SLAB DRAINAGE - NEW HUDSON TERMINAL DWGS. FOR LOCATION AND SIZE

SANITARY RISER DIAGRAM

NOTE

1. FOR GENERAL NOTES AND SYMBOLS SEE DWG.NO. P-X-27

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				20	7-12-71	SG-161	SJC	10	3-20-70	SG 50	SJC
29	4-16-74	SG-290	J.J	19	7-12-71	SG-163	SJC	9	3-20-70	SG-33	J.J
28	1-16-72	SG 256	RB	18	7-12-71	SG-162	SJC	8	12-19-69	SG-16	SJC
27	5-8-72	SG 208	RB	17	2-17-71	SG-138	J.J	7	12-19-69	SG-16	J.J
26	5-8-72	SG 218	RB	16	1-27-71	SG-118	SJC	6	10-10-69	SG-28	J.C
25	5-8-72	SG 191	RB	15	1-27-71	SG-120	SJC	5	6-3-69	SG-15	J.C
24	5-8-72	SG 207	RB	14	10-28-70	SG-119	SJC	4	3-19-69	SG-10	J.C
23	12-3-71	SG-165	EV	13	7-22-70	SG-99	J.K	3	1-20-69	SG-6	R.C
22	10-6-71	SG-178	J.I.	12	3-17-70	SG-51	J.J	2	9-17-68	SG-2	J.C
21	8-17-71	SG-191	L.M	11	3-20-70	SG-66	J.J	1	7-10-68		J.C

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MECHANICAL ENGINEERS

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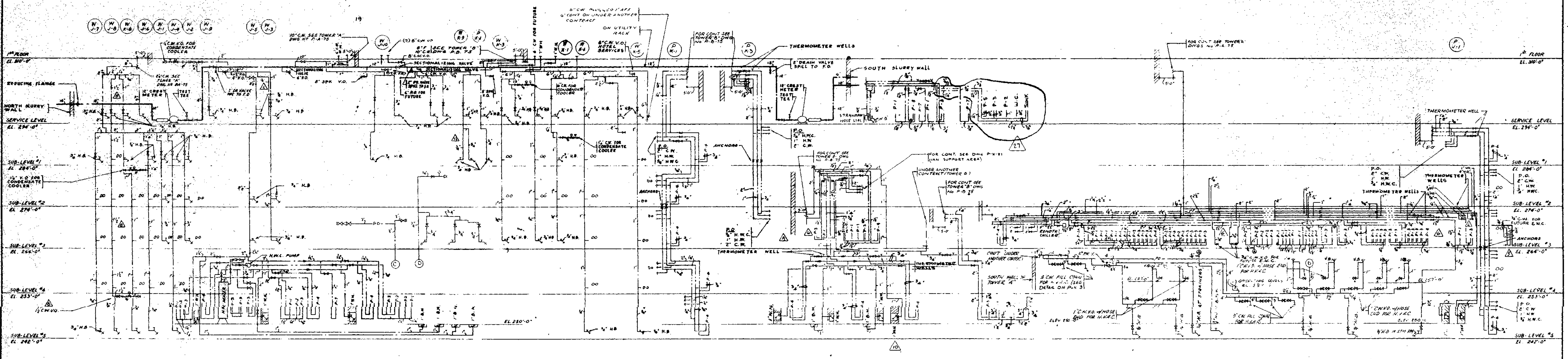
ELECTRICAL ENGINEERS

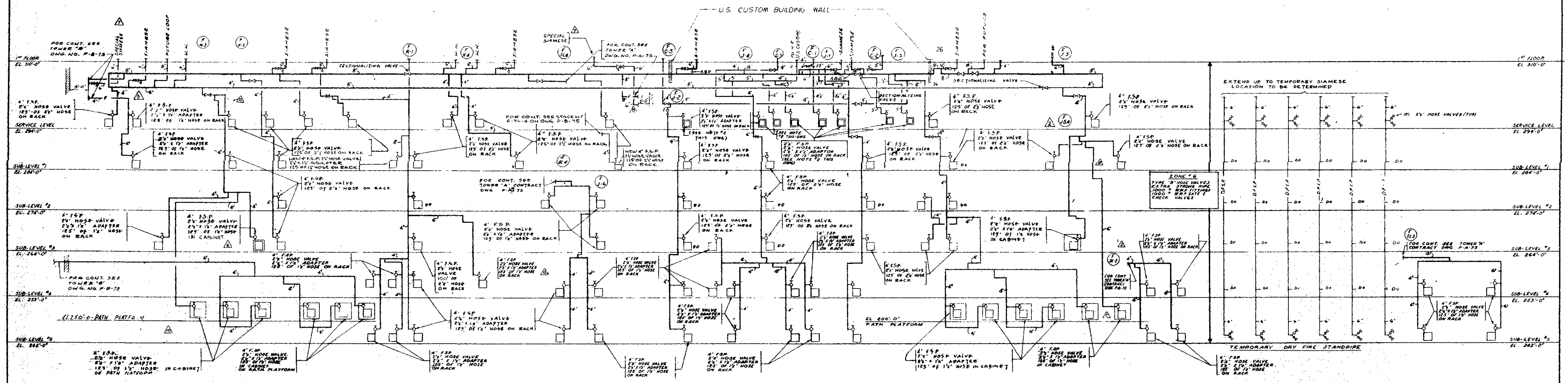
THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SANITARY RISER DIAGRAM

DRAWN	J.D.	CHECKED	F.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	
DWG SERIAL	P-X-22		



WATER RISER DIAGRAM



FIRE STANDPIPE RISER DIAGRAM

NOTES:
1. FOR GENERAL NOTES & SYMBOLS SEE DWG P-X-27
2. PROVIDE HOSE VALVE FOR FUTURE HOSE RACK (H.R. TO BE FURNISHED & INSTALLED UNDER ANOTHER CONTRACT)

NO.	DATE	BULL. NO.	BY	NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
				20	8-13-71	SG-191	LM	10	3-20-70	SG-67	SJC
				19	7-13-71	SG-19	SJC	9	3-20-70	SG-33	J.I.
				18	7-12-71	SG-161	SJC	8	12-19-69	SG-5	SJC
27	4-16-74	SG-290	J.I.	17	2-17-71	SG-138	J.J.	7	12-19-69	SG-36	P.T.
26	3-22-73	SG-262	RB	16	1-27-71	SG-120	SJC	6	12-19-69	SG-16	J.I.
25	6-19-72	SG-205	J.I.	15	1-27-71	SG-118	SJC	5	6-3-69	SG-15	J.C.
24	5-8-72	SG-208	RB	14	10-5-70	SG-114	SJC	4	3-19-69	SG-10	J.C.
23	5-8-72	SG-191	RB	13	3-17-70	SG-51	J.I.	3	1-20-69	SG-6	J.C.
22	5-8-72	SG-207	RB	12	3-20-70	SG-60	SJC	2	9-17-68	SG-2	A.F.
21	12-3-71	SG-165	BV	11	[illegible]	SG-50	SJC	1	7-10-68		J.C.
REVISIONS				REVISIONS				REVISIONS			

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JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

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PAVING, UTILITIES, FOUNDATIONS

TITLE: WATER & F.S.P. RISER DIAGRAM

DRAWN		CHECKED	F.A.S.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-23		

DRAINS

DESIGNATION	REQUIRED	ZURN INDUSTRIES MODEL No	BODY: CAST IRON	SANI-COATED EXTERIOR & ACID RESISTING ENAMEL	GALVANIZED	ALL BRONZE	NICKEL BRONZE	BOTTOM OUTLET	45° OUTLET	SIDE OUTLET	OTHER OUTLET	CLAMPING DEV.	DECK CLAMP	BACK WATER VALVE	THREADED OUTLET	INSIDE CAULK	R.D. RECEIVER PLATE	CHROME PLATED		STRAINER ⚠4: BRONZE MESH SCREEN OVER DOME	CAST IRON	LACQUER COATED	GALVANIZED	SEDIMENT BUCKET	SECONDARY STRAINER	BRONZE	NICKEL-BRONZE	CHROME-PLATED		SATIN FINISH	TRACTOR GRATE	DURESIST COVER	FUNNEL TOP	FLAT TOP	HIGH DOME	LOW DOME	EXTENSION PIECE	VERTICAL ADJUST.	TOP SIZE	ANGLE TYPE	RAISED LIP	BACK WATER VALVE	REMARKS: GENERAL AREA OR LOCATION
A	●	ZG-521	●		●			●				●			●	●					●		●								●			●			●	●	12⅝ϕ				MECH. EQUIP. RM/AREA DRAIN AT N. & S. PROJECTION
* B	●	ZG-521 MOD	●		●			●				●			●	●					●		●								●		●				●	●					MECH. EQUIP. RM'S.
C	●	ZG-521	●		●			●				●			●	●					●		●									●		●			●	●					GARAGE & TENANT STORAGE
** D	●	ZG-543	●		●			●				●			●	●					●		●		●								●			●							SPRINKLER ALARM VALVE DISCH.
E	●	ZG-664	●		●			●				●			●	●																●		●									RAMP "H" TRENCH DR.
F	●	ZG-324-1	●		●			●				●			●	●					●		●		●									●		●							M.E.R. INDIRECT WASTE RECEIVER.
⚠1 G	●	ZN-415-B	●					●				●				●											●			●								●	5ϕ				SHOWER DR
⚠*** H	●	ZN-324-1	●	●				●				●				●									●		●							●		●							REFRIGERATION PLANT EL. 242'-0"
J	●	ZG-150M	●		●			●				●			●						●		●				●							●			●						SIDEWALK FINISHED LEVEL
K	●	ZG-121	●		●			●				●			●					●	●		●													●							UNDER SLAB DRAIN WEST OF TOWER "A"
L	●	ZG-680	●		●			●				●			●	●					●		●									●		●					18ϕ				GARBAGE REFRIG. & CANWASH ROOM ⚠5
M																																											
N																																											
O																																											
P																																											
Q																																											
R																																											
S																																											
T																																											

* MODIFIED WITH BOSS FOR 3" I.P.S. THREADED CONNECTION TO RECEIVE 3" I.P.S. CLOSE NIPPLE & 6¾" DIA FUNNEL 7¼" HIGH WITH RECESSED DOME STRAINER

** DURA-COATED CAST IRON FUNNEL TOP LESS BUCKET & LESS GRATE WITH RECESSED DOME STRAINER TOP MODIFIED TO RECEIVE (3'-0") THREE FOOT STANDPIPE 14" DIA. CAULKED INTO TOP OF DRAIN (STANDPIPE BY PLUMBING CONTRACTOR)

*** PROVIDE WITH SPLIT GR...

VALVE SCHEDULE ⚠

TYPE	REQUIRED	FIG. No.	SIZES MADE	VALVE SPECIFICATIONS (marked ●)	WHERE USED (marked ●)
GATE VALVES	●	1273	½"-3"	SOCKET, NRS, BRONZE, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	371	1"-3"	FLANGED, NRS, BRONZE, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	370	¼"-3"	SCREWED, NRS, BRONZE, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	676A	-3"	SCREWED, O.S.&Y., BRONZE, 200# WWP	C.W. 4" & UP
	●	677A	2½"-8"	FLANGED, O.S.&Y., BRONZE, 200# WWP	C.W. 4" & UP
		650A	1½"-4"	SCREWED, O.S.&Y., IBBM, 200# WWP	
		651A	2"-12"	FLANGED, O.S.&Y., IBBM, 200# WWP	⚠2 12" WATER MAIN AT GREENWICH ST.
		373	2"-6"	SCREWED, NRS, IBBM, 200# WWP	
		376	2"-12"	FLANGED, NRS, IBBM, 200# WWP	
		277	2"-4"	SCREWED, O.S.&Y., IBBM, 400# WWP	
	●	253	2"-12"	FLANGED, O.S.&Y., IBBM, 400# WWP	10" C.W. MAIN TO TOWER A & TOWER B; [illegible]; [illegible] ⚠2
		206A	2"-4"	SCREWED, O.S.&Y., IBBM, 500# WWP	
	● ⚠4	206	2"-12"	FLANGED, O.S.&Y., IBBM, 500# WWP	H.V.A.C. FILL CONN. (REFRIG. PLANT AREA)
		1273	½"-3"	SOCKET, NRS, BRONZE, 200# WWP	
				175# WWP	
		1010CM	2"-18"	FLANGED, O.S.&Y., CAST STEEL, 600# WWP	
	●	1011CM	2"-12"	FLANGED, O.S.&Y., CAST STEEL, 1200# WWP	
CHECK VALVES		1222	½"-3"	SOLDER, BRONZE, 300# WWP	
	●	352	¼"-3"	SCREWED, BRONZE, 300# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	355	1"-3"	FLANGED, BRONZE, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	294	2"-3"	SCREWED, IBBM, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	295	2"-8"	FLANGED, IBBM, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●		2"-	FLANGED, IBBM, 200# WWP	12" WATER MAIN AT GREENWICH ST.
	●	339R	2"-8"	FLANGED, IBBM, 500# WWP	H.V.A.C. FILL CONN. (REFRIG. PLANT AREA)
⚠4	●	1028C	2"-6"	FLANGED, CAST STEEL, 1200# WWP	F.S.P. ZONE 6
	●	845	3"-4"-6"-8"	FLANGED, BRONZE, 175# WWP	C.W. 4" & UP, C.W. 3" & DN., H.W. 3" & DN.
	●	LW-928F	2"-12"	FLANGED, IBBM, 200# WWP	SUMP DISCH., EJECTOR DISCH.
	●	1272	½"-2"	SOCKET, BRONZE, 200# WWP	C.W. 3" & DN., H.W. 3" & DN.
GLOBE or ANGLE VALVES	●	U-20***	2½"	SCREWED, 300# WWP	F.S.P. ZONE 6
		106 A	⅛"-1"	SOLDER, NRS, BRONZE, 300# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	106A	⅛"-3"	SCREWED, NRS, BRONZE, 300# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	108A	⅛"-3"	SCREWED, NRS, BRONZE, 300# WWP	C.W. 3" & DN., H.W. 3" & DN.
	●	115	¾"-1"-1½"	SCREWED, HOSE END, BRONZE, 300# WWP	RISER DR., C.W. 3" & DN., H.W. 3" & DN.
	●	112	¾"-1"-1½"	SCREWED, HOSE END, BRONZE, 300# WWP	RISER DR.
	●	1270	½"-2"	SOLDER, BRONZE, 400# WWP	
		612	2"-2½"-3"-4"	SCREWED, IBBM, 200# WWP	
		613	2"-12"	FLANGED, O.S.&Y., IBBM, 200# WWP	
	●	546 P	¼"-2"	SCREWED, BRONZE, 400# WWP	R.W. THROTTLING VALVE
PLUG VALVES		1092+	[illegible]	SCREWED, IBBM, 125# WWP	
		182+	1"-3"	SCREWED, ALL IRON, 175# WWP	
		169+	1"-4"	FLANGED, ALL IRON, 200# WWP	

Valve specification columns: REQUIRED, FIG. No., SIZES MADE, FLANGED, SCREWED, SOLDER, SOCKET, HOSE END, WITH ADAPTER, O.S.&Y., NRS, BRONZE, IBBM, ALL IRON, CAST STEEL, 125# WWP, 175# WWP, 200# WWP, 250# WWP, 300# WWP, 400# WWP, 500# WWP, 600# WWP, 800# WWP, 1200# WWP. Where used columns: REFG. AT EQUIP., BURIED SERVICE, P.D.T. 1 AT PUMP, P.D.T. 2 AT PUMP, P.D.T. 3 AT PUMP, P.D. AT TANKS, H.P. SUCTION, H.V.A.C. FILL CONN. (REFRIG. PLANT AREA), F.S.P. ZONE 1, F.S.P. ZONE 2, F.S.P. ZONE 3, F.S.P. ZONE 4, F.S.P. ZONE 6, SUMP DISCH., EJECTOR DISCH., 10" C.W. MAIN TO TOWER A & TOWER B, RISER DR., R.W. THROTTLING VALVE, NITROGEN, 12" WATER MAIN AT GREENWICH ST., C.W. 4" & UP, C.W. 3" & DN., STREET SIDE ... SH METER, H.W. HWC 4" & UP, H.W. HWC 3" & DN., 12" WATER MAIN ... CORTLANDT/LIBERTY, DIST. WATER.

\+ ROCKWELL-NORDSTROM VALVE CO. FIGURE

\+\+ WILLIAMS & HAGER Co. FIGURE No.

\+\+\+ ELKHART Co. (REQ'D AT FIRE HOSE STATION)

\+\+\+\+ WALWORTH VALVE CO.

WATER CLOSET CARRIER FILLING SCHEDULE

CODE: TO ZURN FIXTURE SUPPORTS – LETTERS AND NUMBERS:

PREFIX LETTERS: Z – ZURN, E – EXTENDED FITTING WITH CUT OFF SERATIONS, Q – CLOSET CONNECTION, ADJUSTABLE FROM FINISHED WALL, U – "UNIVENT", VENT ON RUN ON SINGLE FITTINGS AND SINGLE VENT ON RUN ON DOUBLE FITTINGS AND T – 1½" OR 2" THREADED SANITARY AUX. INLET.

SERIES NUMBERS: 1203/1204 – "MONOLITHIC" OR SHALLOW ROUGH SYSTEM, HORIZONTAL OR VERTICAL, SINGLE OR DOUBLE AND 1205/1206 DEEP ROUGH SYSTEM, HORIZONTAL OR VERTICAL, SINGLE OR DOUBLE

SUFFIX NUMBERS: – 1, ONE HUB INLET AND – 2, TWO HUB INLETS.

SUFFIX LETTERS: S – SYPHON - JET SYSTEM, B – BLOW OUT SYSTEM, H – HUB & SPIGOT FITTINGS, T – THREADED FITTINGS, R – RIGHT HAND HORIZONTAL FITTING OR RIGHT HAND HUB INLET – FITTING, L – LEFT HAND HORIZONTAL FITTING OR LEFT HAND HUB INLET FITTING, AND D – DOUBLE HORIZONTAL OR VERTICAL FITTING.

NOTE: "P" DIMENSION – FACE PLATE TO FIN. WALL: PROVIDE NIPPLE AND ADJUSTABLE NOSE PIECE

ZURN INDUSTRIES, INC. FIGURE NUMBER	FRONT / ELEVATION	SIZE FITTING	SIZE OF HUB INLET OR INLETS	SIZE OF THREADED INLET	HUB & SPIGOT FITTING	THREADED FITTING	REGULAR LENGTH FITTING	EXTENDED FITTING	ADJUSTABLE FITTING	SEPERABLE FITTING (NON ADJT.)	OFFSET FITTING	FOR 15" RIM HEIGHT	FOR 19" RIM HEIGHT	SINGLE HORIZONTAL	DOUBLE HORIZONTAL	SINGLE VERTICAL	DOUBLE VERTICAL	RIGHT HAND FITTING	LEFT HAND FITTING	RIGHT HAND HUB INLET	LEFT HAND HUB INLET	TWO HUB INLETS	RIGHT HAND THREADED INLET	LEFT HAND THREADED INLET	SHALLOW ROUGH FTG.	DEEP ROUGH FTG.	FOOT NUMBER	BLOCK BASE BOLTED TO SLAB	CANTILEVER FOOT	LEAD GASKET & FITTING	"NEOSEAL" CLOSET GASKET	"TRUEWALL" FINISHING FR. (ALUM.)	2" VENT HUB CONN.	1½" MIN. "P" DIMEN.
ZQU – 1203 SHR OR L	LEFT HAND SHOWN	4"			●		●		●			●		●				●	●						●			●		●	●		●	●
ZQU – 1205 SHR OR L	LEFT HAND SHOWN	4"			●		●		●				●	●				●	●							●	#4	●		●	●		●	●
ZEQU – 1203 SHR OR L	LEFT HAND SHOWN	4"			●			●	●			●		●				●	●						●			●		●	●		●	●
ZEQU – 1205 SHR OR L	LEFT HAND SHOWN	4"			●			●	●				●	●				●	●							●	#4	●		●	●		●	●
ZEQU – 1203 SHD		4"			●			●	●			●			●										●			●		●	●		●	●
ZEQU – 1205 SHD		4"			●			●	●				●		●											●	#4	●		●	●		●	●
ZQU – 1204-1 STR OR L	RIGHT HAND SHOWN	4" & 5"	4"			●	●		●			●				●				●	●				●			●		●	●		●	●
ZQUT – 1204-1 STR OR L	RIGHT HAND SHOWN	4" & 5"	4"	2"		●	●		●			●				●				●	●		●	●	●			●		●	●		●	●
ZQU – 1204-2 ST		4" & 5"	4"			●	●		●			●				●						●			●			●		●	●		●	●
ZQU – 1204-2 STD		4"	4"			●	●		●			●					●					●			●			●		●	●		●	●
ZQU – 1206-1 STR OR L	LEFT HAND SHOWN	4"	4"			●	●		●				●			●				●	●					●	#4	●		●	●		●	●
ZQUT – 1206-1 STR OR L	LEFT HAND SHOWN	4"	4"	2"		●	●		●				●			●				●	●		●	●		●	#4	●		●	●		●	●
ZQU – 1206-1 STD		4"	4"			●	●		●				●				●									●	#4	●		●	●		●	●
ZQUT – 1206-1 STD		4"	4"	2"		●	●		●				●				●									●	#4	●		●	●		●	●

NOTES:

1. No's 1203 & 1204 SERIES FOR NORMAL ROUGH CLOSETS & 1205, 1206 SERIES FOR PARAPLEGIC CLOSETS (P-1A).
2. WHERE VERTICAL CARRIERS ARE REQUIRED CONTRACTOR HAS THE OPTION TO USE 1204 OR 1206 S H D.

URINALS (P-2)

SUPPORT TO BE: ZURN Z-1222 CHAIR CARRIER WITH WEDGE LOCKING BLOCK TYPE FOOT SUPPORTS SECURELY BOLTED TO SLAB, UPPER SUPPORT PLATE AND LOWR BEARING PLATE, STEEL PIPE UPRIGHTS, ADJUSTABLE SLEEVES AND ADJUSTABLE ALIGNMENT TRUSS

LAVATORIES (P-3)

SUPPORT TO BE: ZURN ZN-1231 OR ZN 1233 CONCEALED ARM CHAIR CARRIER. SINGLE OR DOUBLE AS REQUIRED, WITH WEDGE LOCKING BLOCK TYPE FOOT SUPPORTS & SECURELY BOLTED TO SLAB, STEEL PIPE UPRIGHTS AND ADJUSTABLE ALIGNMENT TRUSS. ARMS SHALL BE PROVIDED WITH LEVELING SCREWS AND LOCKING DEVICE AND SHALL BE DESIGNED TO RECEIVE CHROME PLATED CAST BRASS THREADED ESCUTHEONS.

SERVICE SINK (P-6)

SUPPORT ON Z-Z-1229 CHAIR CARRIER WITH HANGER PLATE, VITREOUS ENAMEL BRACKETS & BLOCK TYPE FEET.

NO.	DATE	BUL. NO.	BY
5	2-17-71	SG-138	J.J.
4	3-19-69	SG-10	B.V.
3	1-20-69	SG-6	W.B.
2	9-17-68	SG-2	J.C.
1	7-10-68		J.C.

REVISIONS

APPROVED: CHIEF, PLANNING DIVISION — DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS

JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: EQUIPMENT SCHEDULE No-1

DRAWN	P.J.T.	CHECKED	FAS.
SCALE	NONE	DATE	5-15-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-26		

KEY OF SYMBOLS

REQ'D	SERVICE	DWG. SYMBOL	DWG. ABBREV.
●	SOIL	———	S
●	WASTE	———	W
	ACID WASTE	—AW—	AW
	INDIRECT WASTE	—IW—	IW
●	LEADER	—L—	L
●	VENT	- - - -	V
	ACID VENT	—AV—	AV
	VAPOR VENT	—VV—	VV
●	BURIED PIPING, W/SERVICE NOTED		
●	TENTATIVE PIPING W/SERVICE NOTED		
●	EJECTOR DISCHARGE	—ED—	EJ.D.
●	SUMP DISCHARGE	—SD—	S.D.
●	COLD WATER (STREET PRESSURE)	— - —	C.W.
	COLD WATER (TANK ZONE-1)	—T1—	CWT1
	COLD WATER (TANK ZONE-2)	—T2—	CWT2
	COLD WATER (TANK ZONE-3)	—T3—	CWT3
	COLD WATER (PNEUMATIC TANK)	—PT—	CWPT
	HOT WATER (TANK ZONE-1)	—T1—	HWT1
	HOT WATER (TANK ZONE-2)	—T2—	HWT2
	HOT WATER (TANK ZONE-3)	—T3—	HWT3
●	HOT WATER (STREET PRESSURE)	— - - —	HW
	HOT WATER (PNEUMATIC TANK)	—PT—	HWPT
●	HOT WATER CIRCULATION (STREET PRESS.)	— - - —	HWC
	HOT WATER CIRCULATION (TANK ZONE-1)	—T1—	HWCT1
	HOT WATER CIRCULATION (TANK ZONE-2)	—T2—	HWCT2
	HOT WATER CIRCULATION (TANK ZONE-3)	—T3—	HWCT3
	HOT WATER CIRC. (PNEUMATIC TANK)	—PT—	HWCPT
●	AUTO BALL DRIP DISCHARGE	—BD—	BD
	CHILLED DRINKING WATER	—D—	D
	CHILLED DRINKING WATER CIRCULATION	—DC—	DC
	DISTILLED WATER	—DW—	D.W.
	DEIONIZED WATER	—DIW—	DI.W.
	SOFTENED COLD WATER	—S—	SCW
	SOFTENED HOT WATER	—S—	SHW
	180° HOT WATER	—180°—	180° HW
	180° HOT WATER CIRCULATION	—180°—	180° HWC

REQ'D	SERVICE	DWG. SYMBOL	DWG. ABBREV.
	PUMP DISCHARGE	—PD—	PD
●	FIRE STANDPIPE	—F—	FSP
●	SPRINKLER PIPING	—SP—	SP
	VACUUM CLEANING	—VC—	VC
	GAS PIPING	—G—	G
	COMPRESSED AIR PIPING	—A—	A
	VACUUM PIPING	—V—	V
	NITROGEN PIPING	—N—	N
	NITROUS OXIDE PIPING	—NO—	NO
	OXYGEN PIPING	—O—	O
	HYDROGEN PIPING	—H—	H
●	TEMP. DRY FIRE STANDPIPE	—DFSP—	DFSP
	VALVES		
●	CHECK VALVE		CV
●	HAND VALVE ON HORIZONTAL		
●	VALVE ON VERTICAL		
●	OS&Y VALVE		
●	SOLENOID VALVE		SV
●	PRESSURE RELIEF VALVE		RV
●	PRESSURE REDUCING VALVE (PLAN)		PRV
●	DIAPHRAGM VALVE		DV
	3-WAY DIAPHRAGM VALVE		
	3-WAY HAND VALVE		
●	VACUUM BREAKER		VB
●	AIR VENT VALVE		AVV
	FITTINGS		
●	SINGLE C.O. RUNNING TRAP		
●	DOUBLE C.O. RUNNING TRAP		
●	TRAP W/C.O. EXTEND TO C.O.D.P.		
●	CLEANOUT DECK PLATE	O	CODP
●	AUTO BALL DRIP		ABD
●	FIRE HOSE RACK		HR
●	FIRE HOSE CABINET		HC
●	HOSE BIBB		H.B.
●	WALL HYDRANT		W.H.
●	BOX HYDRANT		B.H.
●	THERMOMETER WELLS		

WATER HAMMER ARRESTORS ALTERNATE TO AIR CHAMBERS

BRANCH SIZE	SHOCKTROL No.*	MAX PRESSURE	MAX LENGTH OF BRANCH RUN
¾"	100	90	25'
1"	100	90	25'
1½"	300	90	25'
2"	400	90	25'
2½"	400	90	25'

* ZURN INDUSTRIES INC.

NOTE:
LOCATE ARRESTORS AT TOP OF THE BRANCH DROP TO FIXTURES AS INDICATED ON ¼" SCALE DETAILS.

FIXTURE CONNECTION SCHEDULE

FIXTURES		REQ.	FIXTURE NO.	SOIL	WASTE	VENT	HW	CW	CD	RIM HEIGHT	REMARKS
WATER CLOSETS			P-1 [illegible]								
WALL HUNG	FLUSH VALVE	●	●	4"		1½"		1½"*		F-3"	
	FLUSH VALVE	●	●	4"		1½"		1½"*		1'-7"	HANDICAPPED
FLOOR STANDING	FLUSH VALVE			4"		1½"		1½"			
	FLUSH TANK			4"		1½"		½"			
URINALS			P-2 [illegible]								
	WASH-OUT	●	●		2"	1½"		1"		2'-0"	
	BLOW-OUT				2"	1½"		1¼"		2'-0"	
	FLOOR OUTLET				2"	1½"		1"			
LAVATORIES			P-3 [illegible]								
		●	●		1½"	1½"	½"	½"		2'-10"	MEN
		●	●		1½"	1½"	½"	½"		2'-7"	WOMEN
SLOP SINKS			P-4 [illegible]								
	WALL HUNG	●	●		2"	1½"	½"	½"			
	FLOOR RECESSED				3"	1½"	½"	½"			
	RECEPTOR	●	●		3"	1½"	½"	½"			
SHOWERS			P-5 [illegible]								
		●	●				½"	½"		6'-6"	HEIGHT TO SHOWER HEAD
P-7 ELECTRIC WATER COOLER WALL MOUNTED		●	P-7		1¼"	1¼"			⅜"		
P-7A ELEC. WATER COOLER FULLY RECESSED-ST. STEEL			P-7A		1½"	1½"			⅜"		
[illegible]		●	P-10		1½"	1½"		½"			SEE DETAILS ON P-X-21
BATH TUBS					2"	1½"	½"	½"			
SINKS			P-6 [illegible]								
	KITCHEN				2"	1½"	½"	½"			
	LABORATORY				2"	1½"	½"	½"			

* ¾" C.W. TO W.C. FLUSH VALVE ** ABOVE FIXTURE

GENERAL NOTES:

1- FOR PLUMBING & SPRINKLER DWG'S NO'S. & TITLES SEE ARCH. DWG. A-JK-2
2- WHERE PLANK PARTITION PENETRATIONS ARE REQUIRED BECAUSE OF PIPING, PROVIDE 18 GUAGE STEEL SHEET, FULL SIZE OF GYPSUM WALL CLOSURE SHEET AS INDICATED ON ARCH. DWG.
3- PIPING SHOWN DOUBLE LINE IS TENTATIVE & CONTRACTOR SHALL NOT INSTALL UNTIL AUTHORIZED BY THE ENG./AUTH.
4- PIPING INDICATED AS BEING IN THE EXISTING TUBE REMOVAL AREA (SHADED AREA ON DWG'S.) SHALL NOT BE INSTALLED UNTIL TUBES ARE REMOVED & SLAB IS POURED.

PUMPS

DESIGNATION	No REQUIRED	G.P.M.	MAX. T.D.H.	MIN. T.D.H.	MECH. SEAL	MODEL	STAGES	VERT. SPLIT	HORIZ. SPLIT	WORKING PRESS	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	MANUAL CONT'L.	STARTING STEPS	AUTO. CONT'L.	PILOT LIGHT	PRESSURE	GUAGE RANGE	METAL BASIN	CONCRETE PIT
** SUMP PUMP ELEV. PIT	1	20	23	△3		SS-805-RJT					⅓	1750	120	1	60			●	●				●
* SUMP PUMP No. 1	3	350	94	84		6-CNBKU-4-FC					20	1750	460	3	60			●	●				●
* 2	3	350	94	84		6-CNBKU-4-FC					20	1750	460	3	60			●	●				●
* 3	3	350	90	80		6-CNBKU-4-FC					20	1750	460	3	60			●	●				●
* 4	3	350	90	80		6-CNBKU-4-FC					20	1750	460	3	60			●	●				●
* EJECTOR PUMP No. 1	2	350	102	84		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
* 2	2	350	110	86		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
* 3	2	350	105	85		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
* 4	2	350	110	86		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
* 5	2	350	105	85		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
* 6	2	350	98	83		6-CSBMU-4-FC L-C-6222					20	1750	460	3	60			●	●				●
H.W. CIRC. **	1	10	6			100					1/12		115	1	60								
* SUMP PUMP No. 5	3	450	94	84		6-CSBMU-4-FC					25	1750	460	3	60			●	●				●

* WEIL PUMP Co. ** BELL & GOSSETT Co.

H.W. HEATER ** (1 REQ'D - LOCATED IN JANITOR'S CLOSET NORTH AREA PLATFORM "C" EL. 250'-0")
PROVIDE (1) (TWO-6 KW TOTAL OF 12KW) ELECTRIC WATER HTR. - COPPER SILICON 480 V. 3 PHASE, 60 CY. A.C. AS MANUFACTURED BY HUBBELL (THE ELECTRIC HEATER CO., STRATFORD, CONN.) OR EQUAL.
** WEIL PUMP CO.-PROVIDE ONE SUMP PUMP IN EACH ELEV. PIT WHERE INDICATED ON PLUMBING DRWG'S.

MATERIAL SCHEDULE

PIPE:

SYSTEMS	REQUIRED	C.I.	STL. SCHED. 40	STL. SCHED. 80	BLACK	GALVANIZED	C.T.	R.B.P.	C.I.W.P.	D.I.S.P. (CLASS 1)	D.I.S.P. (CLASS 2 MECH. JOINT)	TAR COATED	
DRAINAGE (BURIED)	●	●										●	
VENTS (BURIED)	●	●										●	
HOUSE DRAINS FROM TOWERS-UP TO 10'-0" OF HOUSE TRAP	●		●			●							
* HOUSE DRAINS EXCEPT FROM TOWERS	●	●	●			●							
* SANITARY & WASTE STACKS	●	●	●			●							
* SANITARY & WASTE BRANCHES	●	●	●			●							
* LEADERS (EL. 332' & BELOW)	●	●	●			●							
STORM HOUSE SEWERS	●									●			
* VENTS	●	●	●			●							
C.W. 3½" & SMALLER	●							●					
C.W. 4" & LARGER	●							●					
DRINKING WATER													
** C.W. E[illegible]G METER ROOMS (5'-0" OUTSIDE SLURRY WALL TO FLANGE INSIDE ROOMS)	●								●				
H.W.	●							●					
BURIED C.W.													
FIRE STANDPIPE	●			●									
COMBINED HOUSE SEWERS (ON UTILITY RACK)	●									●			
COMPRESSED AIR													
SOAP SYSTEM													
SUMP & EJECTOR DISCH. (BURIED)	●										●		
SUMP & EJECTOR DISCH. (NOT BURIED)	●		●			●							
*** RIVER WATER DRAINAGE (REFRIGERATION PLANT) △4	●									●			

FITTINGS:

SYSTEMS	C.I. SOIL	C.I. DRAINAGE	STD. C.I.-175# W.W.P.	EX.H.C.I.-400# W.W.P.	STD. C.I. FLG.-175# W.W.P.	STD. MALL.-300# W.W.P.	TAR COATED	CAST BRONZE-175# W.W.P.	THREADLESS BRONZE 400# W.W.P.	CAST STEEL OR DUCTILE IRON-1000# W.W.P.	CLASS 2 (MECH. JOINT)	CLASS D**	CLASS 1 (MECH. JOINT)	BLACK	GALVANIZED
DRAINAGE (BURIED)	●						●								
VENTS (BURIED)	●						●								
HOUSE DRAINS FROM TOWERS-UP TO 10'-0" OF HOUSE TRAP		●													●
* HOUSE DRAINS EXCEPT FROM TOWERS	●	●													●
* SANITARY & WASTE STACKS	●	●													●
* SANITARY & WASTE BRANCHES	●	●													●
* LEADERS (EL. 332' & BELOW)	●	●													●
STORM HOUSE SEWERS													●		
* VENTS	●		△			●	△								●
C.W. 3½" & SMALLER									●						
C.W. 4" & LARGER									●						
DRINKING WATER															
** C.W. E[illegible]G METER ROOMS (5'-0" OUTSIDE SLURRY WALL TO FLANGE INSIDE ROOMS)												●			
H.W.									●						
BURIED C.W.															
FIRE STANDPIPE										●				●	
COMBINED HOUSE SEWERS (ON UTILITY RACK)													●		
COMPRESSED AIR															
SOAP SYSTEM															
SUMP & EJECTOR DISCH. (BURIED)											●			△	●
SUMP & EJECTOR DISCH. (NOT BURIED)		●													
*** RIVER WATER DRAINAGE (REFRIGERATION PLANT) △4													●		

JOINTS:

SYSTEMS	CAULKED	THREADED	SOLDERED	WELDED	BRAZED	MECH. JOINT	
DRAINAGE (BURIED)	●						
VENTS (BURIED)	●						
HOUSE DRAINS FROM TOWERS-UP TO 10'-0" OF HOUSE TRAP		●					
* HOUSE DRAINS EXCEPT FROM TOWERS	●	●					
* SANITARY & WASTE STACKS	●	●					
* SANITARY & WASTE BRANCHES	●	●					
* LEADERS (EL. 332' & BELOW)	●	●					
STORM HOUSE SEWERS						●	
* VENTS	●	●					
C.W. 3½" & SMALLER					●		
C.W. 4" & LARGER					●		
DRINKING WATER							
** C.W. E[illegible]G METER ROOMS (5'-0" OUTSIDE SLURRY WALL TO FLANGE INSIDE ROOMS)	●					●	
H.W.					●		
BURIED C.W.							
FIRE STANDPIPE		●					
COMBINED HOUSE SEWERS (ON UTILITY RACK)						●	
COMPRESSED AIR							
SOAP SYSTEM							
SUMP & EJECTOR DISCH. (BURIED)						●	
SUMP & EJECTOR DISCH. (NOT BURIED)		●					
*** RIVER WATER DRAINAGE (REFRIGERATION PLANT) △4						●	

* CONTRACTORS OPTION TO USE EITHER C.I. OR STEEL PIPING SYSTEM.
** CONTRACTORS OPTION
△4 *** CEMENT LINED DUCTILE IRON SEWER PIPE

NO.	DATE	SUB. NO.	BY
6	12-19-69	SG-16	J.J.
5	6-5-69	SG-15	J.C.
4	3-19-69	SG-10	J.C.
3	1-20-69	SG-6	J.C.
2	7-17-68	SG-2	J.C.
1	7-10-68		J.C.

REVISIONS

APPROVED
CHIEF, PLANNING DIVISION
DATE

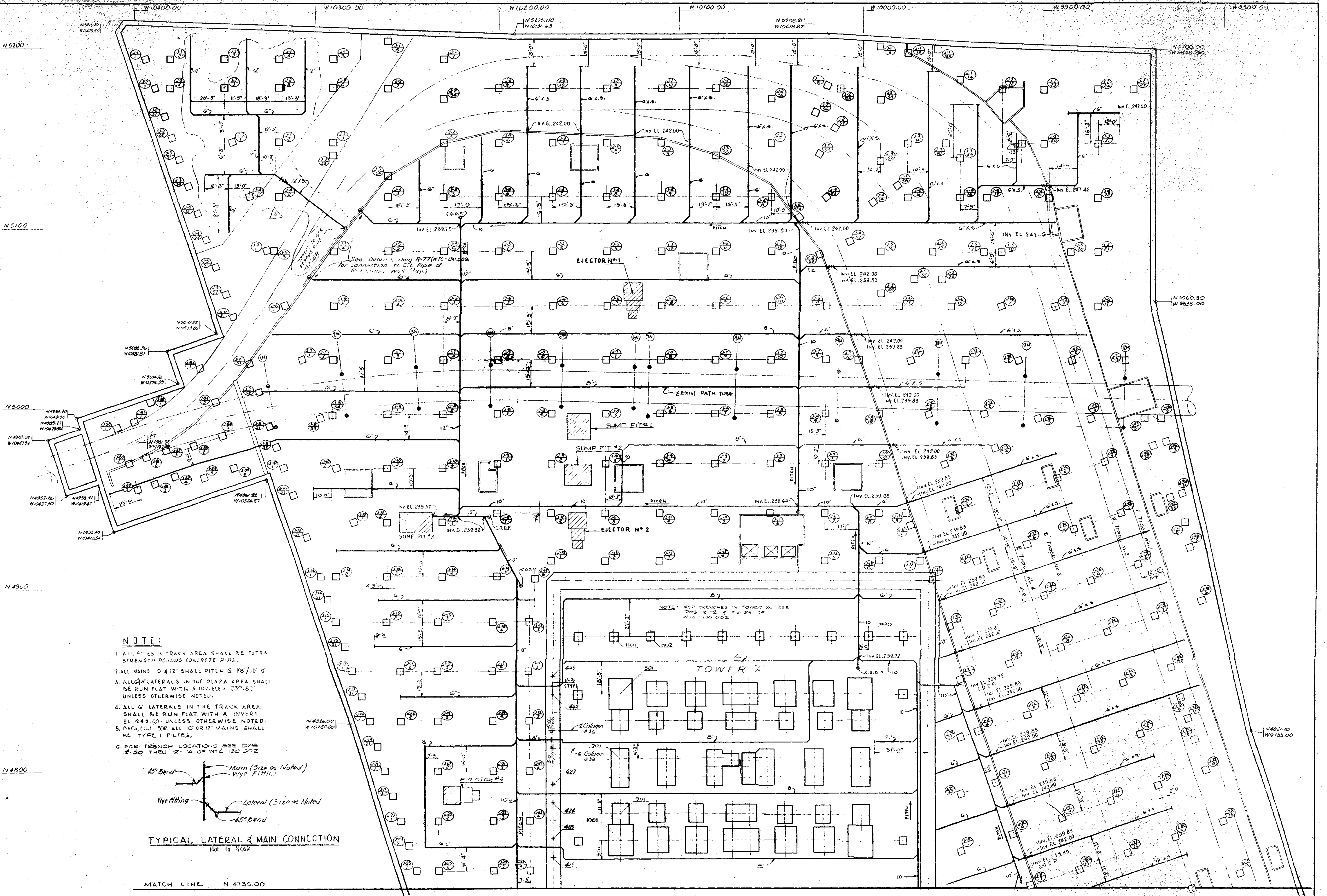
THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES — MINORU YAMASAKI, ARCHITECT
EMERY ROTH & SONS — RICHARD ROTH, ARCHITECT
WORTHINGTON, SKILLING, HELLE & JACKSON — STRUCTURAL ENGINEERS
JAROS, BAUM & BOLLES — MECHANICAL ENGINEERS
JOSEPH R. LORING & ASSOCIATES — ELECTRICAL ENGINEERS
THE PORT OF NEW YORK AUTHORITY — PAVING, UTILITIES, FOUNDATIONS

TITLE: EQUIPMENT SCHEDULE No-2

DRAWN: P.J.T. CHECKED: F.A.S.
SCALE: NONE DATE: 5-15-68
PROJECT NUMBER: SHEET OF
DRAWING NUMBER: P-X-27



NOTE:

1. ALL PIPES IN TRACK AREA SHALL BE EXTRA STRENGTH POROUS CONCRETE PIPE.
2. ALL MAINS 10" & 12" SHALL PITCH @ 1/8"/10'-0"
3. ALL 6" & 8" LATERALS IN THE PLAZA AREA SHALL BE RUN FLAT WITH A INV. ELEV 239.83 UNLESS OTHERWISE NOTED.
4. ALL 6" LATERALS IN THE TRACK AREA SHALL BE RUN FLAT WITH A INVERT EL. 242.00 UNLESS OTHERWISE NOTED.
5. BACKFILL FOR ALL 10" OR 12" MAINS SHALL BE TYPE I FILTER
6. FOR TRENCH LOCATIONS SEE DWG R-60 THRU R-74 OF WTC 130.002

TYPICAL LATERAL & MAIN CONNECTION
Not to Scale

MATCH LINE N 4735.00

REV. NO.	CHIEF ENGINEER
2	[signature]
3	[signature]

NO.	DATE	BY	DESCRIPTION	CHIEF STR. ENGINEER
2	4/16/69	I.S.	REVISED POROUS PIPE LAYOUT TO CONFORM TO TRENCHES AS SHOWN IN DWG R-60 TO R-7? OF WTC-130.002	[initials]
3	7/25/69	I.S.	ADDED POROUS PIPES UNDER CORNER DIAPHRAGM	[initials]

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
1	7-9-68		S.P.				

REVISIONS

CHIEF STRUCTURAL ENGINEER

APPROVED

CHIEF, PLANNING DIVISION

DATE

THE WORLD TRADE CENTER

THE PORT OF NEW YORK AUTHORITY

MINORU YAMASAKI & ASSOCIATES
MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

WORTHINGTON, SKILLING, HELLE & JACKSON
STRUCTURAL ENGINEERS

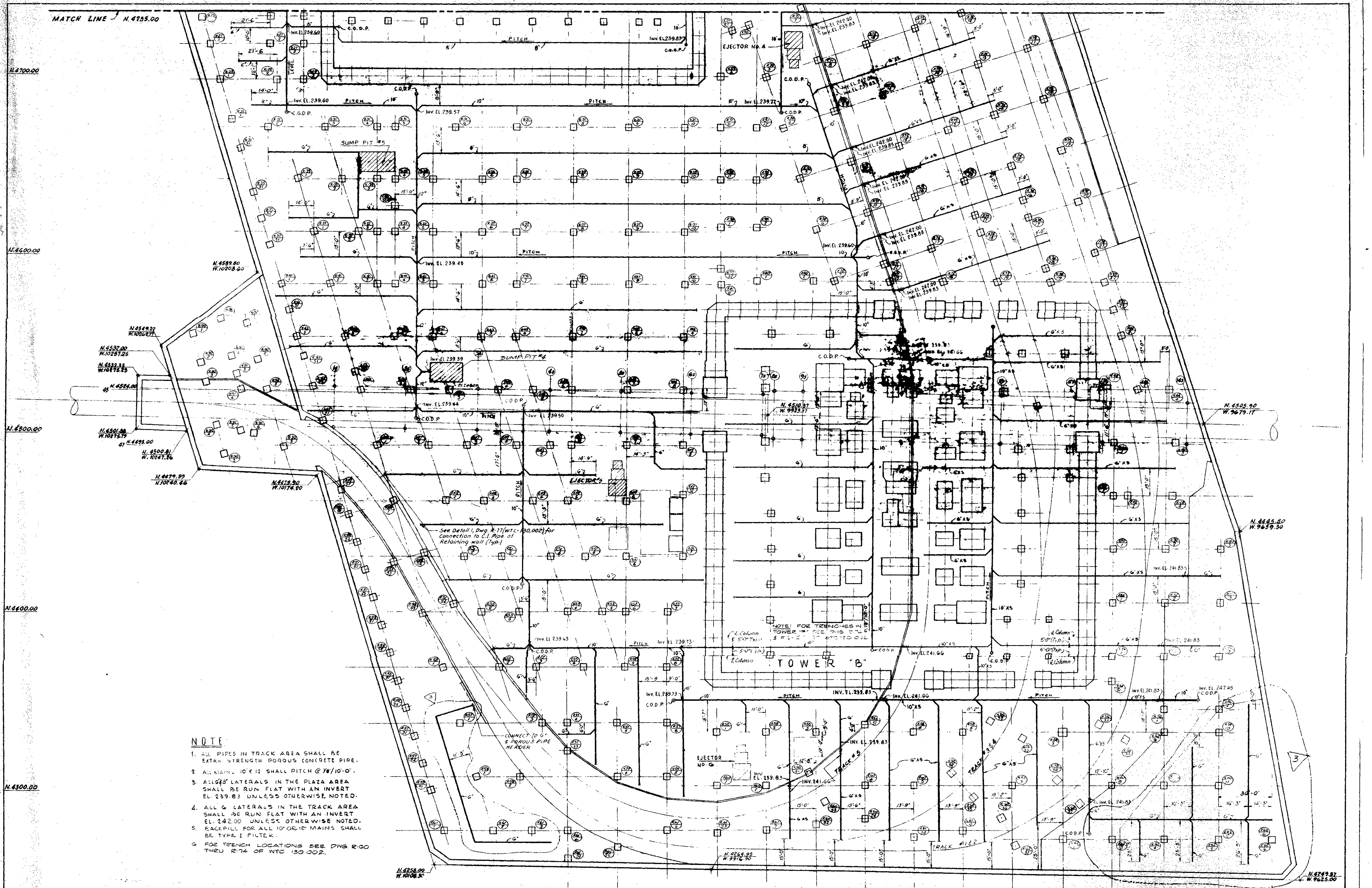
JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING, UTILITIES, FOUNDATIONS

TITLE: SUB GRADE PLAN - ZONE J
SUB - DRAINAGE PLAN

DRAWN:
CHECKED:
SCALE: 1/16" = 1'-0"
DATE: May 15, 65
PROJECT NUMBER:
SHEET OF
DRAWING NUMBER: PX-50



NOTE

1. ALL PIPES IN TRACK AREA SHALL BE EXTRA STRENGTH POROUS CONCRETE PIPE.
2. ALL MAINS 10" & 12 SHALL PITCH @ 1/8"/10'-0".
3. ALL 6" & 8" LATERALS IN THE PLAZA AREA SHALL BE RUN FLAT WITH AN INVERT EL. 239.83 UNLESS OTHERWISE NOTED.
4. ALL 6 LATERALS IN THE TRACK AREA SHALL BE RUN FLAT WITH AN INVERT EL. 242.00 UNLESS OTHERWISE NOTED.
5. BACKFILL FOR ALL 10" OR 12" MAINS SHALL BE TYPE I FILTEK.
6. FOR TRENCH LOCATIONS SEE DWG. R-60 THRU R-74 OF WTC 130.002.

REV. NO.	CHIEF ENGINEER
2	[signature]
3	[signature]

NO.	DATE	BY	DESCRIPTION	CHIEF STR ENGINEER
2	4/16/69	I.S.	REVISED POROUS PIPE LAYOUT TO CONFORM TO TRENCHES AS SHOWN IN DWG. R-60 TO R-11 OF WTC-130.002	[signature]
3	7/25/69	I.S.	ADDED POROUS PIPES UNDER CORNERS DIAPHRAGM	[signature]

NO.	DATE	BUL. NO.	BY	NO.	DATE	BUL. NO.	BY
1	7-9-68		5.0				

REVISIONS — REVISIONS

CHIEF ENGINEER

CHIEF STRUCTURAL ENGINEER

APPROVED

CHIEF, PLANNING DIVISION

DATE

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MECHANICAL ENGINEERS

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ELECTRICAL ENGINEERS

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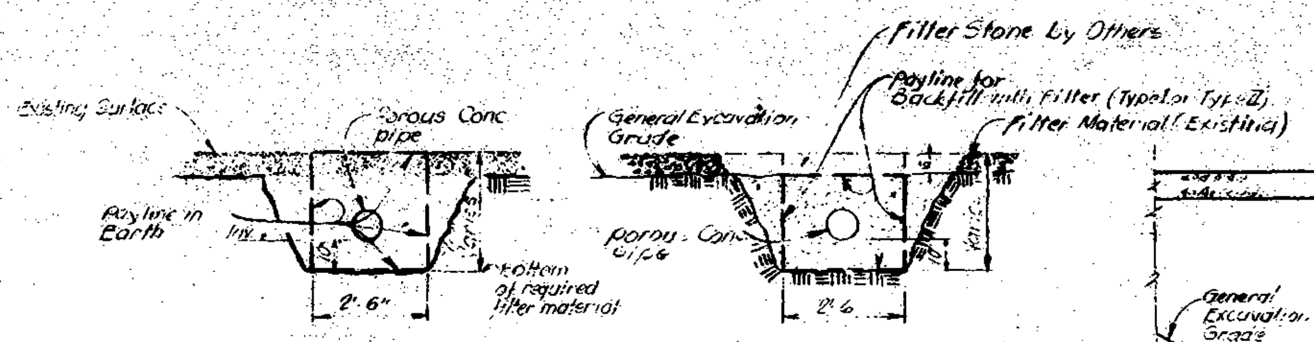
PAVING, UTILITIES, FOUNDATIONS

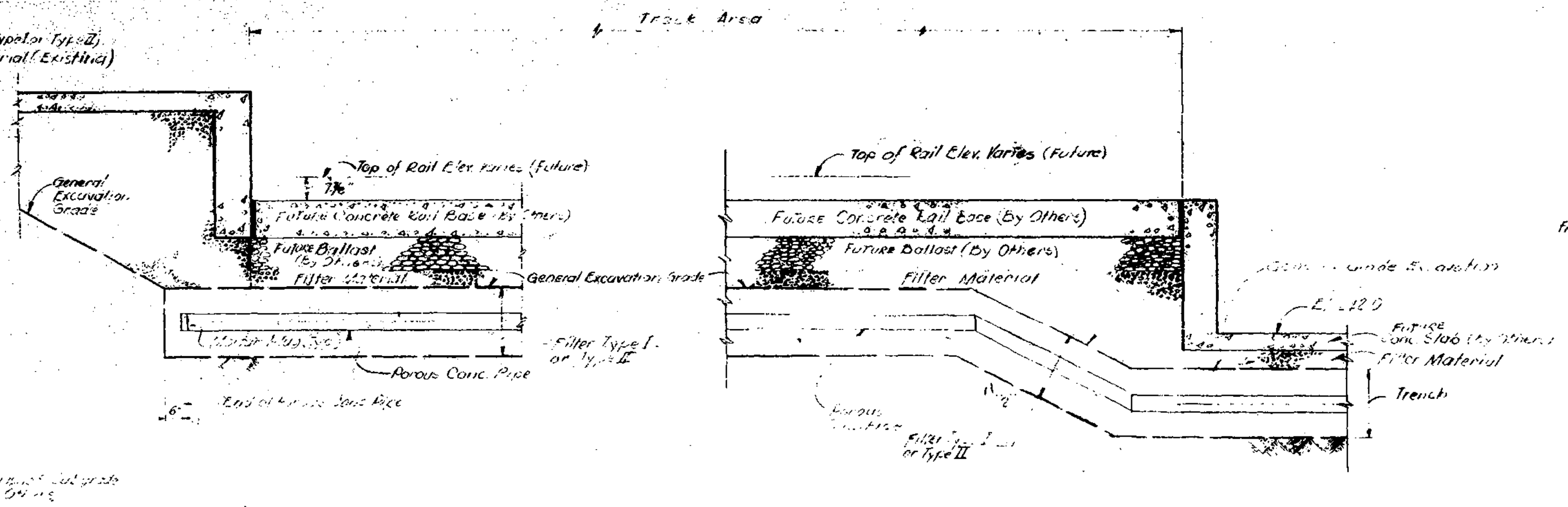
TITLE: SUB GRADE PLAN - ZONE K
SUB - DRAINAGE PLAN

DRAWN	C.H.L.	CHECKED	
SCALE	1/16" = 1'-0"	DATE	May 15, 68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	PX-51		

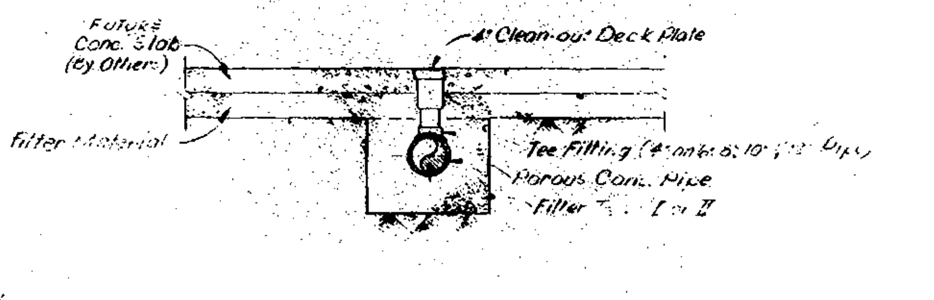


EXCAVATION BACK FILL

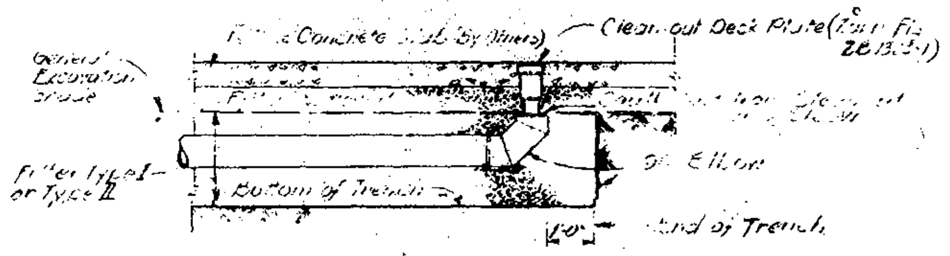
DRAINAGE TRENCH IN EARTH



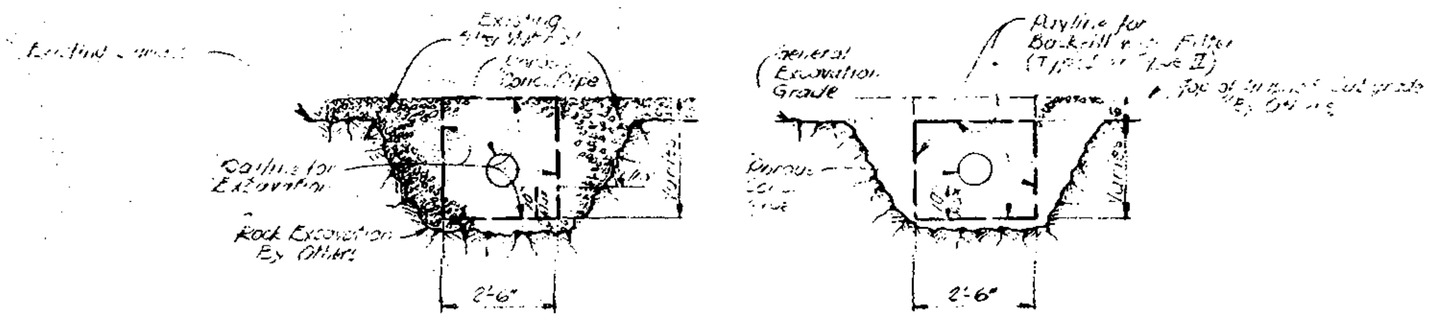
TYPICAL CROSS-SECTION THROUGH TRACK AND PLATFORM AREA



TYPICAL CLEAN-OUT CONNECTION



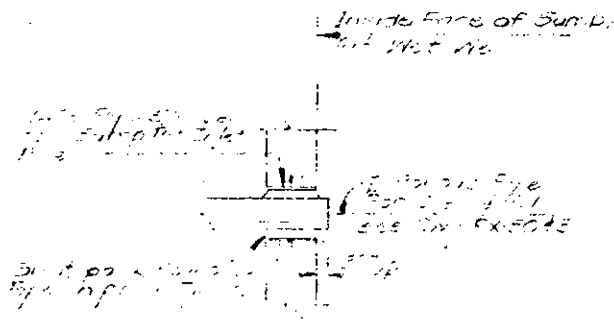
TYPICAL END OF PIPE CLEAN-OUT CONNECTION



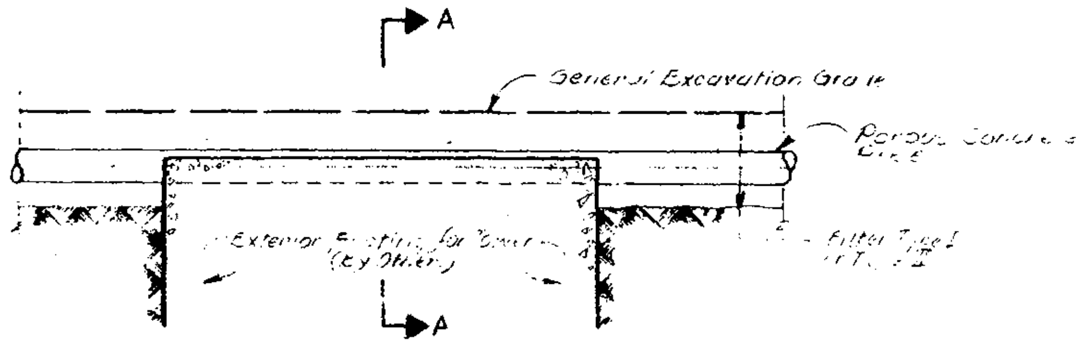
EXCAVATION BACK FILL

DRAINAGE TRENCH IN ROCK

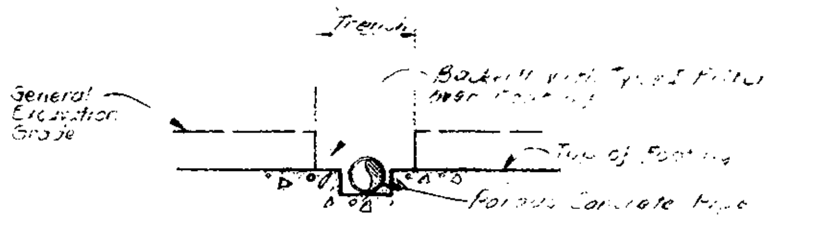
NOTE:
FILTER SHALL BE TYPE I OR TYPE II (SEE SPECIFICATIONS) AS DETERMINED BY THE ENGINEER IN THE FIELD



TYPICAL DETAIL - POROUS PIPE INLET CONNECTION



DETAIL OF POROUS CONCRETE PIPE OVER EXTERIOR TOWER FOOTINGS



SECTION A-A

NOTE:
1. FOR GENERAL EXCAVATION GRADES, SEE CONTRACT WTC-130.002, DRAWINGS No. R-60 THRU R-74 INCLUSIVE.
2. FOR TRENCH LOCATIONS, SEE DWG R-60 THRU R-74 OF WTC-130.002.

REV. NO.	CHIEF ENGINEER
2	[illegible]

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

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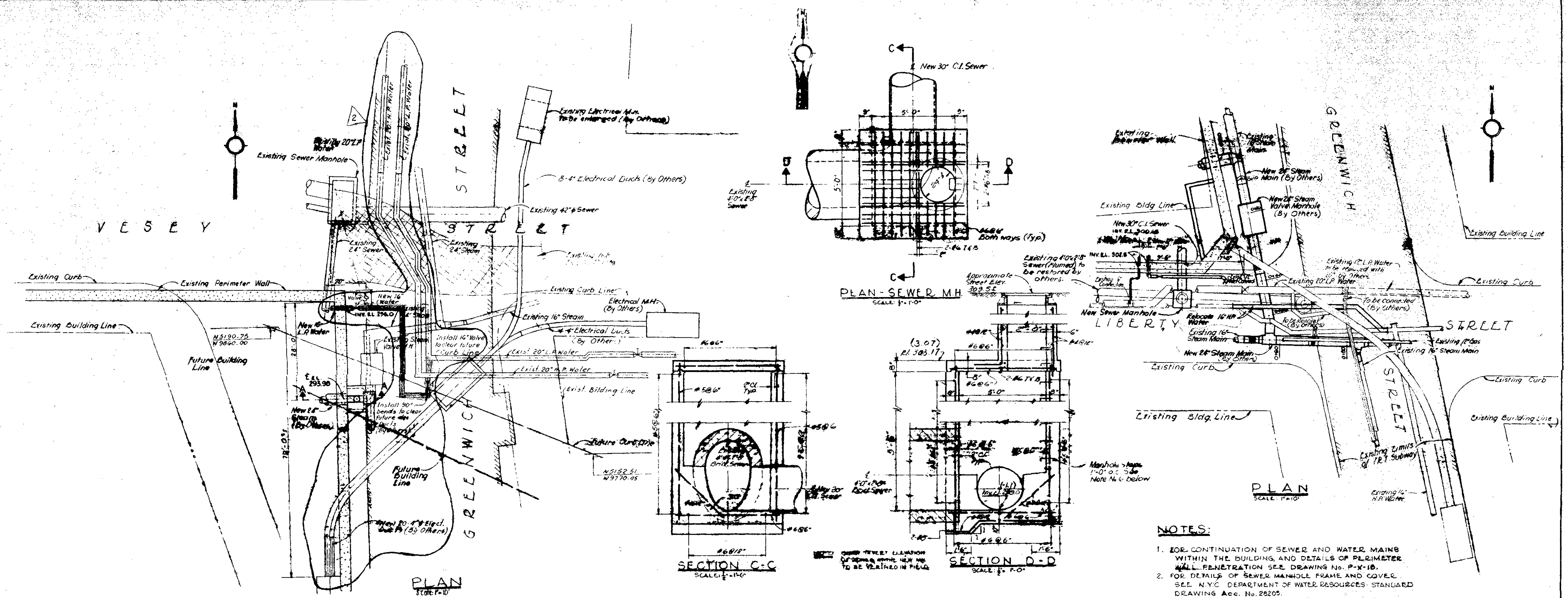
TITLE
SUB-GRADE PLAN
SUB-DRAINAGE DETAILS

DRAWN		CHECKED	
SCALE		DATE	
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	PX-52		



NOTES:

1. FOR CONTINUATION OF SEWER AND WATER MAINS WITHIN THE BUILDING, AND DETAILS OF PERIMETER WALL PENETRATION SEE DRAWING No. P-X-18.
2. FOR DETAILS OF SEWER MANHOLE FRAME AND COVER SEE N.Y.C. DEPARTMENT OF WATER RESOURCES STANDARD DRAWING Acc. No. 28205.
3. PIPE FOR THE 16" H.P. WATER MAIN RELOCATION IS TO BE SALVAGED FROM EXISTING MAIN.
4. ALL CAST-IN-PLACE CONCRETE IS TO BE CLASS "D"
5. CUT OR DAMAGED EXISTING PAVEMENT SHALL BE PATCHED USING "SHELL-CO-MIX" COLD ASPHALT CONCRETE OR EQUAL; APPLIED AND COMPACTED IN NOT MORE THAN TWO INCH THICK COURSES TO A TOTAL THICKNESS OF NOT LESS THAN SIX INCHES. ALLOW TWENTY-FOUR HOURS BETWEEN COURSES.
6. FOR DETAILS OF WROUGHT IRON MANHOLE STEPS SEE N.Y.C. DEPARTMENT OF WATER RESOURCES STANDARD DRAWING No. Acc No. 28721.
7. ELEVATIONS SHOWN ( ) REFER TO MANHATTAN DATUM WHICH IS 2.75' ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY.

REV No.	CHIEF ENGINEER
1	[signature]
2	[signature]

CHIEF ENGINEER

NO.	DATE	BUL. NO.	BY
2	3/6/70	to Service	J.S.
1	3/14/69	MH. Reinf.	P.H.F.

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

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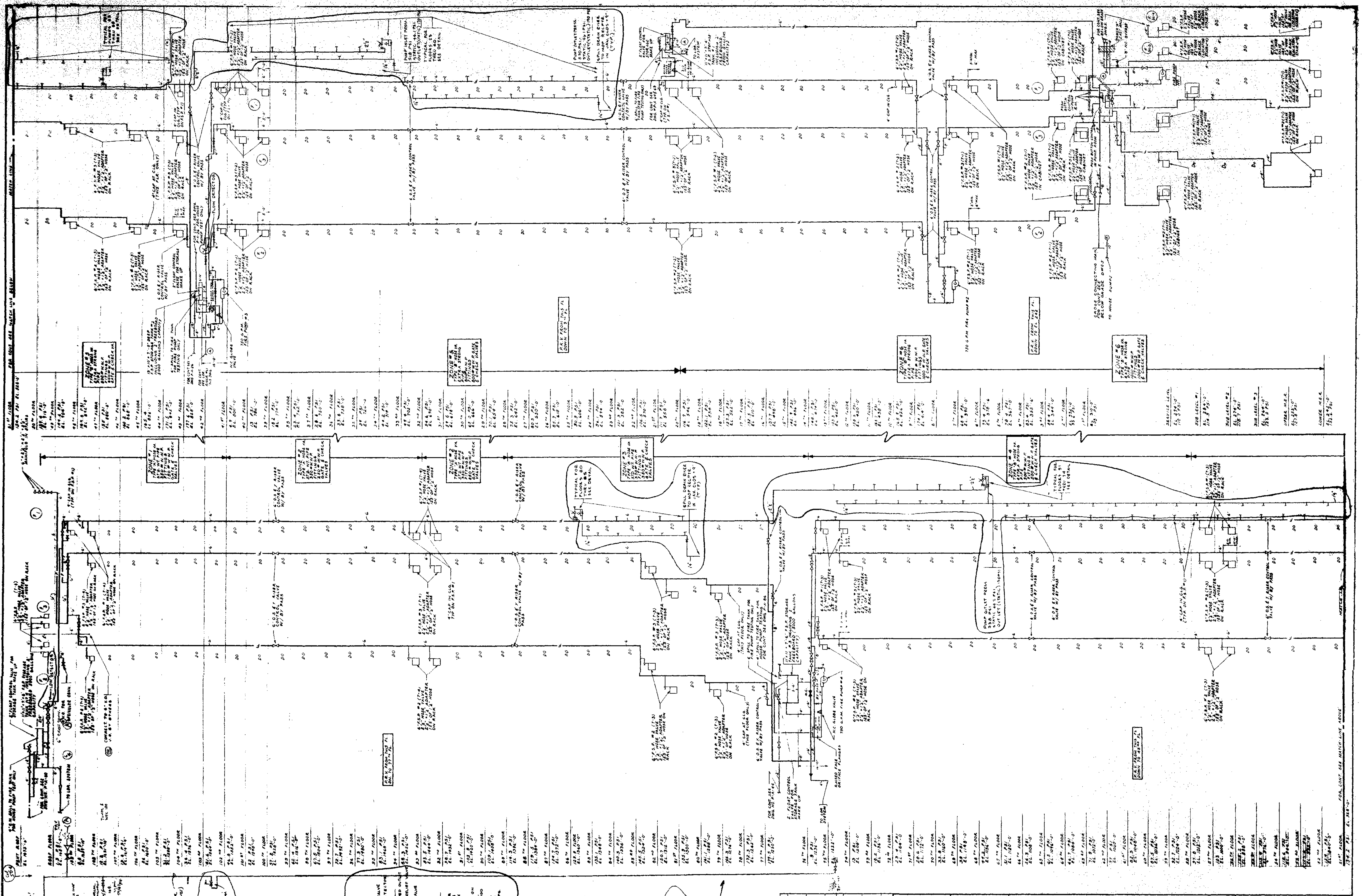
PAVING, UTILITIES, FOUNDATIONS

TITLE: OUTSIDE UTILITY CONNECTIONS

WATER AND SEWER

DRAWN	P.H.F.	CHECKED	
SCALE	As Shown	DATE	MAY 15, 1968
PROJECT NUMBER	WTC-531.00	SHEET	OF
DRAWING NUMBER	P-X-60		



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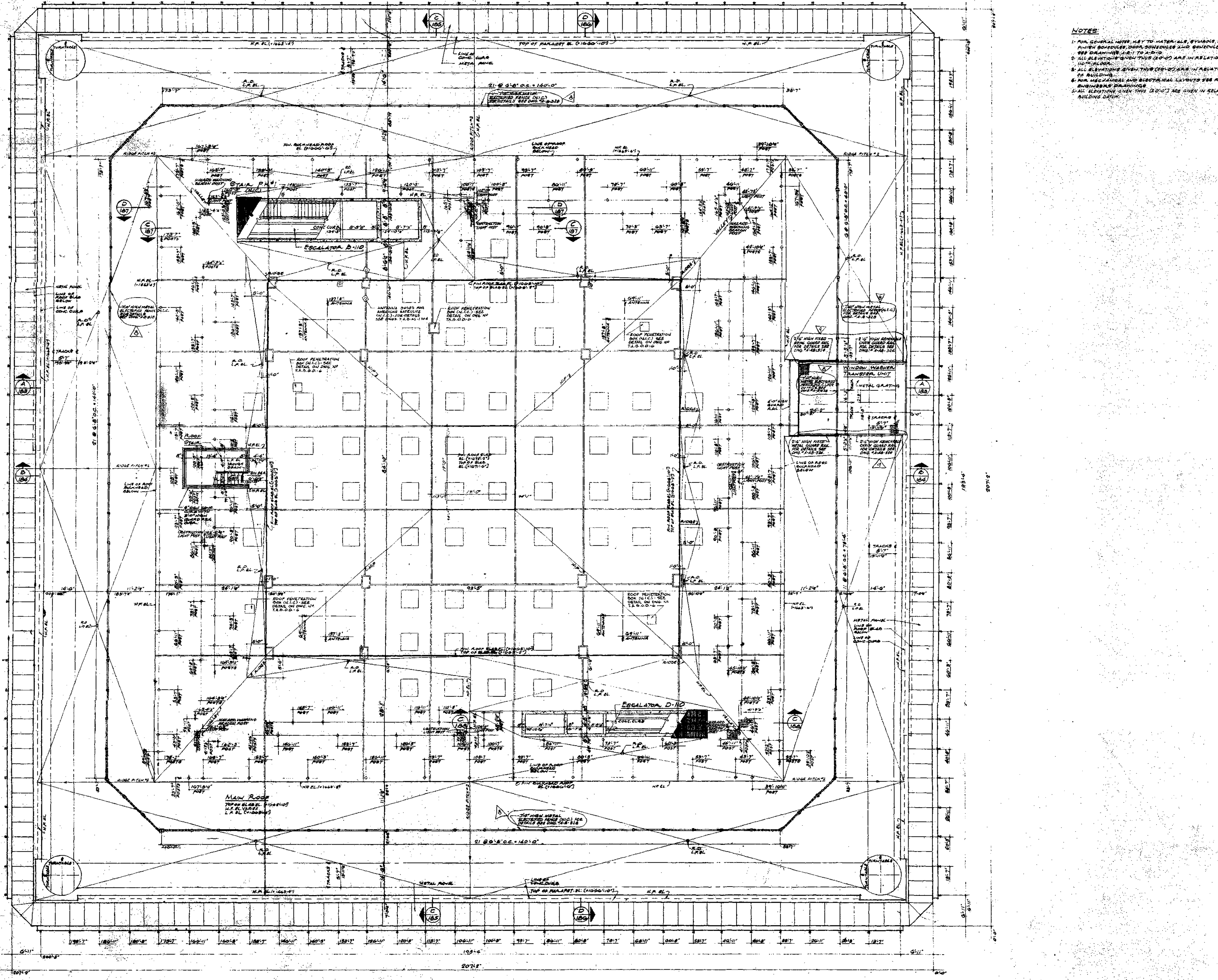
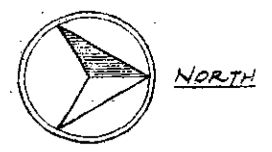
PAVING, UTILITIES, FOUNDATIONS

TITLE	F.S.P. RISER DIAGRAM		
DRAWN	F. A.	CHECKED	F. A. S.
SCALE	NO SCALE	DATE	3-6-68
PROJECT NUMBER		SHEET	OF
DRAWING NUMBER	P-X-5-6-68		

FILE AT END OF SUB GRADE PLUMBING





NOTES:

1- FOR GENERAL NOTES, KEY TO MATERIALS, SYMBOLS, ABBREVIATIONS FINISH SCHEDULES, DOOR SCHEDULES AND SCHEDULE OF DRAWINGS SEE DRAWINGS A-B-1 TO A-B-9
2- ALL ELEVATIONS GIVEN THUS (20'-0") ARE IN RELATION TO FINISH 110TH FLOOR.
3- ALL ELEVATIONS GIVEN THUS (20'-0") ARE IN RELATION TO DATUM OF BUILDING.
4- FOR MECHANICAL AND ELECTRICAL LAYOUTS SEE RESPECTIVE ENGINEERS DRAWINGS
5- ALL ELEVATIONS GIVEN THUS [20'-0"] ARE GIVEN IN RELATION TO BUILDING DATUM.

CONTRACT BID DRAWING date

BULLETINS NOT DATED ARE IN THE PROCESS OF COMPLETION

NO.	DATE	BUL. NO.	BY
9	5-30-74	B-268	L.J.
8		B-266	L.J.
7	7-22-74	B-246	D.S.
6	10-4-73	B-204	L.B.
5	3-8-73	B-157	D.S.
4	10-25-72	B-158	D.S.
3	10-25-72	B-154	D.S.
2	9-7-72	B-143	L.C.
1	11-23-71	B-132	L.J.

REVISIONS

APPROVED

CHIEF, PLANNING DIVISION

DATE

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MINORU YAMASAKI, ARCHITECT

EMERY ROTH & SONS
RICHARD ROTH, ARCHITECT

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON
STRUCTURAL ENGINEERS

JAROS, BAUM & BOLLES
MECHANICAL ENGINEERS

JOSEPH R. LORING & ASSOCIATES
ELECTRICAL ENGINEERS

THE PORT OF NEW YORK AUTHORITY
PAVING UTILITIES, FOUNDATIONS

1/8"=1'-0" 0 4' 8' 16' 24'

TITLE: INTERMEDIATE BULKHEAD & ROOF DRAINAGE PLAN

DRAWN | CHECKED
SCALE 1/8"=1'-0" | DATE 10-10-70
PROJECT NUMBER | SHEET OF
DRAWING NUMBER A-B- W A

TOWER B Plumbing Bulkhead & Roof